
SPECIFICATIONS

(FOR CONSTRUCTION CONTRACT)

SOLICITATION NO. DACA45 02 B 0002

REPLACE WATER LINES -LINE 3A

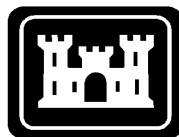
PSR, P.N. 5333-23-002

IOWA AAP, Iowa



**American
Ordnance**

NOVEMBER 2001



U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

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SPECIFICATIONS FOR CONSTRUCTION OF
REPLACE WATER LINES - LINE 3A
P.N. 5333-23-002
IOWA AAP, IOWA

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-- End of Project Table of Contents --

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| | | | | |
|--|---------------------|---|----------------|---------------|
| SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair) | 1. SOLICITATION NO. | 2. TYPE OF SOLICITATION | 3. DATE ISSUED | PAGE OF PAGES |
| | DACA45-02-B-0002 | <input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP) | 27 NOV 2001 | 1 OF 2 |

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

| | | | |
|---|-----------------------------|---|----------------|
| 4. CONTRACT NO. | | 5. REQUISITION/PURCHASE REQUEST NO. | 6. PROJECT NO. |
| 7. ISSUED BY | CODE | 8. ADDRESS OFFER TO | |
| | CT | | |
| U.S. ARMY ENGINEER DISTRICT, OMAHA 106 South 15th Street Omaha, Nebraska 68102-1618 | | U.S. ARMY CORPS OF ENGINEERS, OMAHA Attn: CONTRACTING DIVISION (CENWO-CT) 106 South 15th Street Omaha, Nebraska 68102-1618 | |
| 9. FOR INFORMATION CALL: | A. NAME | B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) | |
| | See SECTION 00100, Para. 24 | See SECTION 00100, Para. 24 | |

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying no., date):

The Offeror hereby agrees to do all the work described in these documents entitled:

REPLACE WATER LINES - LINE 3A
 PN 5333-23-0002
 IOWA AAP, IOWA

RETURN WITH BID: SECTION 00010 (SF1442), SECTION 00600 AND BID GUARANTEE

OTHER BONDING INFORMATION: SEE SECTION 00700, CONTRACT CLAUSES CLAUSE "FAR 52.228-15 PERFORMANCE AND PAYMENT BONDS".

| | |
|--|--------------------|
| 11. The Contractor shall begin performance within <u>10</u> calendar days and complete it within <u>300</u> calendar days after receiving | |
| <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. (See _____.) | |
| 12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.) | 12B. CALENDAR DAYS |
| <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | 10 |

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 0 copies to perform the work required are due at the place specified in Item 8 by 1400 (hour) local time 27 DEC 2001 (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☒ is, ☐ is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

| | | | | | | | | | | | |
|---|--|---|--|---|--|---|--|---|-----------------|-----------------|--|
| 14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code) DUNS Number: | | | | 15. TELEPHONE NO. (Include area code) | | | | 16. REMITTANCE ADDRESS (Include only if different than Item 14) | | | |
| CODE FACILITY CODE | | | | | | | | | | | |
| 17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within <u>60</u> calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.) | | | | | | | | | | | |
| AMOUNTS | | Entire Work, Complete \$ _____ (In Figures) | | | | | | | | | |
| | | Contractor's Fax No. _____ CAGE Code _____ | | | | | | | | | |
| | | Contractor's E-Mail address _____ | | | | | | | | | |
| 18. The offeror agrees to furnish any required performance and payment bonds. | | | | | | | | | | | |
| 19. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the solicitation - give number and date of each) | | | | | | | | | | | |
| AMENDMENT NO. | | | | | | | | | | | |
| DATE | | | | | | | | | | | |
| 20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print) | | | | | | 20B. SIGNATURE | | | 20C. OFFER DATE | | |
| AWARD (To be completed by Government) | | | | | | | | | | | |
| 21. ITEMS ACCEPTED: | | | | | | | | | | | |
| | | | | | | | | | | | |
| 22. AMOUNT | | | | 23. ACCOUNTING AND APPROPRIATION DATA | | | | | | | |
| 24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified) | | | | ITEM <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <div style="width: 10px; height: 10px; background-color: black;"></div> <div style="margin-left: 5px;">26</div> </div> | | 25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) () | | | | | |
| 26. ADMINISTERED BY CODE | | | | 27. PAYMENT WILL BE MADE BY | | | | | | | |
| U.S. Army Engineer District, Omaha 106 South 15th Street Omaha, Nebraska 68102-1618 | | | | USAED Omaha c/o USACE Finance Center 5722 Integrity Drive Millington, TN 38054-5005 | | | | | | | |
| CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE | | | | | | | | | | | |
| <input type="checkbox"/> 28. NEGOTIATED AGREEMENT (contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract. | | | | | | <input type="checkbox"/> 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary. | | | | | |
| 30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print) | | | | | | 31A. NAME OF CONTRACTING OFFICER (Type or print) | | | | | |
| 30B. SIGNATURE | | | | 30C. DATE | | 31B. UNITED STATES OF AMERICA BY | | | | 31C. AWARD DATE | |

SECTION 00100

INSTRUCTIONS, CONDITIONS & NOTICES TO BIDDERS
(July 2000, Revised November 2001)

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SECTION 00100

INSTRUCTIONS, CONDITIONS & NOTICES TO BIDDERS

1 GENERAL BIDDING INFORMATION

Bids shall be either mailed or hand-carried as indicated below. Bid will be PUBLICLY opened at the bid time indicated on Standard Form SF 1442 (Page 00010-1).

1.1 MAILED BIDS AND HAND-CARRIED BIDS

Mailed bids shall be addressed to the location as indicated on Standard Form SF 1442 (Page 00010-1), Item No. 8.

Hand-Carried bids shall be delivered to the U.S. Army Engineer District, Omaha to Contracting Division, Room 301, 106 South 15th Street, Omaha, NE 68102-1618.

1.2 SOLICITATION RESTRICTIONS

This solicitation is unrestricted and open to both large and small business participation.

1.3 BASIS FOR AWARD.

IT IS INTENDED THAT AWARD WILL BE MADE TO ONE BIDDER FOR THE ENTIRE WORK.

1.4 DESCRIPTION OF WORK

The work consists of furnishing all plant, labor, materials, and equipment and performing all work for replacing the water line - Line 3A located at Iowa AAP, Iowa. Work shall be in accordance with plans and specifications issued with this solicitation.

1.5 ESTIMATED CONSTRUCTION COST

The estimated construction cost of this project is between \$1,000,000 and \$2,500,000.

2 (FAR 52.214-6) EXPLANATION TO PROSPECTIVE BIDDERS (APRIL 1984).

Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all other

prospective bidders as an amendment to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders.

3 (FAR 52.214-1) SOLICITATION DEFINITIONS - SEALED BIDDING (JULY 1987).

"Government" means United States Government. "Offer" means "bid" in sealed bidding. "Solicitation" means an invitation for bids in sealed bidding.
(FAR 52.214-1.)

(NOTE: FACSIMILE, ELECTRONIC COMMERCE OR TELEGRAPHIC BIDS ARE NOT AUTHORIZED AND WILL NOT BE ACCEPTED. TELEGRAPHIC MODIFICATIONS OR WITHDRAWAL OF BIDS ARE AUTHORIZED. FACSIMILE MODIFICATIONS OR WITHDRAWAL ARE NOT AUTHORIZED.)

4 (FAR 52.214-5) SUBMISSION OF BIDS (MAR 1997).

(a) Bids and bid modifications shall be submitted in sealed envelopes or packages (unless submitted by electronic means) (1) addressed to the office specified in the solicitation and (2) showing the time and date specified for receipt, the solicitation number, and the name and address of the bidder.

(b) Bidders using commercial carrier services shall ensure that the bid is addressed and marked on the outermost envelope or wrapper as prescribed in subparagraphs (a) (1) and (2) of this provision when delivered to the office specified in the solicitation.

(c) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice.

(d) Facsimile bids, modifications, or withdrawals, will not be considered unless authorized by the solicitation

(e) Bids submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.

5 (FAR 52.214-18) PREPARATION OF BIDS - CONSTRUCTION (APRIL 1984).

(a) Bids must be--

- (1) Submitted on the forms furnished by the Government or on copies of those forms, and
- (2) **Manually signed.** The person signing a bid must initial each erasure or change appearing on any bid form.

(b) The bid form may require bidders to submit bid prices for one or more items on various bases, including--

- (1) Lump sum bidding;
- (2) Alternate prices;
- (3) Units of construction; or
- (4) Any combination of subparagraphs (1) through (3) above.

(c) If the solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(d) Alternate bids will not be considered unless this solicitation authorizes their submission.]

6 (FAR 52.214-4) FALSE STATEMENTS IN BIDS (APRIL 1984).

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

(NOTE: FACSIMILE, ELECTRONIC COMMERCE OR TELEGRAPHIC BIDS ARE NOT AUTHORIZED AND WILL NOT BE ACCEPTED. TELEGRAPHIC MODIFICATIONS OR WITHDRAWAL OF BIDS ARE AUTHORIZED. FACSIMILE MODIFICATIONS OR WITHDRAWAL ARE NOT AUTHORIZED.)

7 (FAR 52.214-7) LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (NOV 1999).

(a) Bidders are responsible for submitting bids, and any modifications or withdrawals, so as to reach the Government office designated in the invitation for bids (IFB) by the time specified in the IFB. If no time is specified in the IFB, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that bids are due.

(b)(1) Any bid, modification, or withdrawal received at the Government office designated in the IFB after the exact time specified for receipt of bids is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late bid would not unduly delay the acquisition; and-

(i) If it was transmitted through an electronic commerce method authorized by the IFB, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of bids; or

(ii) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of bids and was under the Government's control prior to the time set for receipt of bids.

(2) However, a late modification of an otherwise successful bid that makes its terms more favorable to the Government, will be considered at

any time it is received and may be accepted.

(c) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the bid wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(d) If an emergency or unanticipated event interrupts normal Government processes so that bids cannot be received at the Government office designated for receipt of bids by the exact time specified in the IFB and urgent Government requirements preclude amendment of the IFB, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(e) Bids may be withdrawn by written notice received at any time before the exact time set for receipt of bids. If the IFB authorizes facsimile bids, bids may be withdrawn via facsimile received at any time before the exact time set for receipt of bids, subject to the conditions specified in the provision at 52.214-31, Facsimile Bids. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

(End of provision)

8 INFORMATION FOR MODIFYING BIDS.

Bids which have been delivered to the designated bid receiving office may be modified or withdrawn by mail, mailgram, or telegram received at any time before the exact time set for receipt of bids. Modifications or withdrawals sent by mail should be transmitted to the place of bid opening Standard Form SF1442 (Page 00010-1), Item 8. Telephone modifications or withdrawals, other than telecopier, will not be accepted. All bid modifications or withdrawals must be signed by the bidder or its authorized representative. Any questions regarding these procedures should be directed to the Omaha District's Contracting Division at (402) 221-4265 or 4824. This number should also be used to verify the receipt of messages.

9 BID GUARANTEE.

See Contract Clauses clause FAR 52.228-1, BID GUARANTEE. Bid guarantee MUST be in an original and accompanied by an original power of attorney of the surety.

10 PERFORMANCE AND PAYMENT BONDS.

See Contract Clauses clause FAR 52.228-15, PERFORMANCE AND PAYMENT BONDS. To have the bond considered valid, both the bond and the Power of Attorney must be original. Facsimile copies will not be acceptable, and will render the bid invalid, therefore eliminating it from competition.

(NOTE: FOR THE PURPOSES OF THIS SOLICITATION, THE WORD "ITEM" SHALL BE

CONSIDERED TO MEAN "SCHEDULE.")

11 (FAR 52.214-19) CONTRACT AWARD - SEALED BIDDING - CONSTRUCTION (AUG 1996).

(a) The Government will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, considering only price and the price-related factors specified elsewhere in the solicitation.

(b) The Government may reject any or all bids, and waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation of the bid.

(d) The Government may reject a bid as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work, and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Government even though it may be the low evaluated bid, of it is so unbalanced as to be tantamount to allowing an advance payment.

12 NORTH AMERICAN CLASSIFICATION SYSTEM (NAICS) .

In accordance with NAICS Manual, the work in this solicitation is assigned classification code 234910 (SIC 1623).

13 SMALL BUSINESS SIZE STANDARD.

This solicitation is not limited to small business concerns, but, for definition purposes, a concern is small if its average annual receipts for its preceding 3 fiscal years did not exceed [\$27.5][\$17] million. (based on FAR 19.102)

14 (FAR 52.214-3) AMENDMENTS TO INVITATIONS FOR BIDS (DECEMBER 1989).

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid, (3) by letter or telegram or (4) by facsimile, if facsimile bids are authorized in the solicitation. The Government

must receive the acknowledgment by the time and at the place specified for receipt of bids. (FAR 52.214-3.)

15 CHANGES PRIOR TO OPENING BIDS.

The right is reserved, as the interest of the Government may require, to revise the specifications and/or drawings prior to the date set for opening bids. Such revisions will be announced by an amendment or amendments to this Invitation for Bids. It shall be the responsibility of the prospective bidder to obtain copies of amendments from the website listed in paragraph: PLAN HOLDER'S LIST below. The Government may (but not required) send an amendment notification to let prospective bidders know that an amendment has been issued.] If the revisions and amendments are of a nature which requires material changes in quantities or prices to be bid, the date set for opening bids may be postponed as necessary, in the opinion of the Commander, to enable bidders to revise their bids. In such cases, the amendment will include an announcement of the new date for opening bids.

16 (FAR 52.214-34) SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE (APR 1991)

Offers submitted in response to this solicitation shall be in the English language. Offers received in other than English shall be rejected.

(End of provision)

17 (FAR 52.214-35) SUBMISSION OF OFFERS IN U.S. CURRENCY (APR 1991)

Offers submitted in response to this solicitation shall be in terms of U.S. dollars. Offers received in other than U.S. dollars shall be rejected.

(End of provision)

18 AVAILABILITY OF SPECIFICATIONS, STANDARDS, AND DESCRIPTIONS.

Specifications, standards, and descriptions cited in this solicitation are available as indicated below:

18.1 (FAR 52.211-2) AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 1999).

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained—

- (a) From the ASSIST database via the Internet at <http://assist.daps.mil>; or
- (b) By submitting a request to the—

Department of Defense Single Stock Point (DoDSSP)
Building 4, Section D

700 Robbins Avenue
Philadelphia, PA 19111-5094
Telephone (215) 697-2667/2179
Facsimile (215) 697-1462.

(End of provision)

18.2 CORPS OF ENGINEERS SPECIFICATIONS.

Corps of Engineers specifications of the CRD-C series may be obtained from the National Institute of Building Sciences Construction Criteria Base (CCB) on CD-ROM. Contact the CCB directly at (202) 289-7800 for an order form or obtain an order form at the following internet address:

<http://www.ccb.org/ccbsubscribe/Subsmain.asp>. There is a regular annual subscription fee to CCB of \$700 per year. (Note: This is considered to be the Contractor's responsibility and cost). This will include CCB on CD-ROM or DVD plus unlimited internet access plus access to the new Whole Building Design Guide, now under construction and scheduled for launch in October 2001. Selected Corps of Engineers specifications of CRD-C series are available in Acrobat Reader .pdf file format at the following internet address:
<http://www.wes.army.mil/SL/MTC/handbook/handbook.htm>.

18.3 COMMERCIAL (NON-GOVERNMENT) SPECIFICATIONS, STANDARDS, AND DESCRIPTIONS.

These specifications, standards, and descriptions are not available from Government sources. They may be obtained from the publishers.

19 AVAILABLE PLANT.

Each bidder shall, upon request of the Contracting Officer, furnish a list of the plant available to the bidder and proposed for use on the work.

20 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE.

Whenever a contract or modification of contract price is negotiated, the Contractor's cost proposals for equipment ownership and operating expenses shall be determined in accordance with the requirements of paragraph: EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE, contained in Section: 00800, SPECIAL CONTRACT REQUIREMENTS of the specifications. A copy of EP 1110-1-8 "Construction Equipment Ownership and Operating Expense Schedule" is available for review at the office listed in paragraph: SITE VISIT (CONSTRUCTION) herein or at the following internet address:
<http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep.htm>.
(copy also included on CD-ROM issued with this solicitation).

21 NOTICE REGARDING BUY AMERICAN ACT.

The Buy American Act (41 U.S.C. 10a-10d) generally requires that only

domestic construction material be used in the performance of this contract. Exception from the Buy American Act shall be permitted only in the case of nonavailability of domestic construction materials. A bid or proposal offering nondomestic construction material will not be accepted unless specifically approved by the Government. When a bidder or offeror proposes to furnish nondomestic construction material, his bid or proposal must set forth an itemization of the quantity, unit price, and intended use of each item of such nondomestic construction material. When offering nondomestic construction material pursuant to this paragraph, bids or proposals may also offer, at stated prices, any available comparable domestic construction material, so as to avoid the possibility that failure of a nondomestic construction material to be acceptable under this paragraph will cause rejection of the entire bid. All bidders are cautioned that, prior Government conduct notwithstanding, the Contractor's selection of a domestic construction material (as defined in FAR 52.225-5 Buy American Act-Construction Materials) which would require the subsequent selection of a foreign construction material for compatibility is not a justification for waiver of the Buy American Act. It is the Contractor's responsibility to verify, prior to submitting the materials for approval, that each system can be built to meet the contract specifications without the use of foreign construction materials.

22 IOWA SALES AND USE TAX.

The Government is entitled to receive refunds from the State of Iowa of Iowa sales or use tax paid by its construction contractors with respect to goods, wares, and merchandise which became an integral part of the project. SECTION 00800: SPECIAL CONTRACT REQUIREMENTS, clause "IOWA SALES AND USE TAX," requires the Contractor to furnish to the Contracting Officer the statement required by Section 422.45 (7a), Iowa Code annotated, and to include in subcontracts and purchase orders a clause insuring submission of the statement by first-tier subcontractors and suppliers and their subcontractors and suppliers. Telephone: (515) 281-3114 (Department of Revenue).

23 (FAR 52.236-27) SITE VISIT (CONSTRUCTION) (FEB 1995).

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Contractors interested in inspecting the site of the proposed work should contact the Burlington Resident Office, U.S. Army Corps of Engineers, Iowa Army Ammunition Plant, Box 13, c/o Army Mail Room, Middletown, IA 52638, Roy Brewer at Telephone: (319) 753-1386, Fax: (319) 753-1370. Pre-bid site visits must be arranged in advance for access to Iowa AAP, Iowa. Site visits will be scheduled on 4 and 11 December 2001. No other site visit dates will be scheduled. Bidders shall call the Resident Engineer's Office a minimum of 24 hours prior to date of scheduled tour. Access for site visit

will be restricted to U.S. Citizens only. The bidders wishing access shall provide the following information:

- a. Name of Contractor.
- b. Names of individuals.
- c. Social Security numbers.
- d. Date of Birth.
- e. The proposed day of the site visit.

24 BIDDER'S QUESTIONS AND COMMENTS.

Questions and/or comments relative to these bidding documents should be submitted via e-mail or mailed to the address identified in paragraph: AVAILABILITY OF BID RESULTS below. Comments should reach this office no later than 20 calendar days prior to the date set for opening of bids, if feasible, in order that changes, if needed, may be added by amendment. E-mail addresses, FAX numbers, items for question and points of contact are listed below. Phone calls with questions should be made between 8:30 a.m. and 3:30 p.m. (Central Standard Time) Monday through Friday.

Note: A courtesy copy of all questions shall be sent to the Contract Specialist (Contractual Matters Point of Contact), the Program Manager and Specifications Section (Technical Content Points of Contact).

| <u>Items for Question</u> | <u>Points of Contact/ Phone numbers/ FAX Numbers</u> | <u>E-mail Addresses</u> |
|---|--|--------------------------------|
| Contractual Matters: Loreen Blume | 402-221-4265 or 4824 (phone) | loreen.k.blume@usace.army.mil |
| Ordering CD-Rom of the plans and specifications (limit One per firm)/ amendments**/ Bid Results (See Paragraph AVAILABILITY OF BID RESULTS, below)/ Receipt of Bids | 402-221-4199 (Fax) | |
| Planholder's List | See paragraph: PLAN HOLDER'S LIST, below. | |
| Small Business Matters | Hubert Carter 402-221-4110 (phone) | hubert.j.carter@usace.army.mil |
| Technical Contents Of Plans and Specification | Alan Ruff 402-221-3806 (phone) 402-221-4828(Fax) | alan.l.ruff@usace.army.mil |
| | Or | |

Specifications douglas.r.larsen@usace.army.mil
Section
Doug Larsen
402-221-4547 (Phone)
402-221-3842 (Fax)

Site Inspection See Paragraph: SITE
VISIT (CONSTRUCTION), above

**** - The Government may elect to send a notification that an amendment has been posted to the Government's web address. It shall be the Contractor's, Subcontractor's and Supplier's responsibility to check the Government's web address for amendments.**

24.1 PLAN HOLDER'S LIST.

The CD-Rom will provide a list of plan holders that have registered at the time the CD-Rom was created. It is bidder's responsibility to check for any updates to the plan holder's list, which is available at the following web address:

<http://ebs.nwo.usace.army.mil/ebs/contract.htm>

24.2 AVAILABILITY OF BID RESULTS (Local Clause/Provision)

Bid results will be available after bid opening on the Government's web address:

<http://ebs.nwo.usace.army.mil/ebs/contract.htm>. Official bid abstracts will be available and may be requested by sending a self-addressed stamped envelope to: U.S. Army Corps of Engineers, Omaha District, ATTN: CENWO-CT-M(Blume), 106 South 15th Street, Omaha, NE 68102-1618.

25 (FAR 52.233-2) SERVICE OF PROTEST (AUG 1996).

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgement of receipt from District Counsel, 106 South 15th Street, Omaha, Nebraska 68102-1618.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

26 PRE-AWARD SURVEY INFORMATION (Local Provision) (Sep 93)

In accordance with Paragraph PERFORMANCE AND PAYMENT BONDS, request that the following information be submitted with your bid. This facilitates the award

process.

1. Financial
 - Name, address, and fax number of Financial Institution
 - Name and phone number of finance individual (primary and alternate) to be contacted for information

2. Bonding Information
 - Provide the name, address, regular phone number and fax number of your Surety Company.

3. Performance
 - Provide three (3) references to be contacted on your company's performance

The following information should be submitted:

- Name and Fax number of Owner/User
- Project Name, Location, Contract Number, and dollar value
- Name and phone number of individuals (primary and alternate) that can verify performance of the project

27 (FAR 52.204-6) DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUNE 1999)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number is a nine-digit number assigned by Dun and Bradstreet Information Services.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.
- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location

and phone number of the local Dun and Bradstreet Information Services office from the Internet home page at <http://www.customerservice@dnb.com>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@mail.dnb.com.

(End of provision)

28 (FAR 52.216-1) TYPE OF CONTRACT (APR 1984).

The Government contemplates award of a Firm Fixed Price contract resulting from this solicitation.

29 SUBCONTRACTING PLAN/SUBCONTRACTING GOALS REGARDING THE UTILIZATION OF SMALL BUSINESS CONCERNS.

a. Application. This clause applies only to large business concerns submitting bids for services exceeding \$500,000 or for construction exceeding \$1,000,000.

b. Federal Acquisition Regulations (FAR). Attention is directed to the following FAR provisions contained in this solicitation:

52.219-8, Utilization of Small Business Concerns (Alternate I)

52.219-9, Small Business Subcontracting Plan (Alternate I)

52.219-16, Liquidated Damages - Small Business Subcontracting Plan

52.226-1, Utilization of Indian Organizations and Indian-Owned Economic Enterprises

c. Goals. The U.S. Army Corps of Engineers considers the following goals reasonable and achievable for fiscal year 2002 and for the performance of the resultant contract:

(1) 61.4% of planned subcontracting dollars with small business concerns.

(2) 9.1% of planned subcontracting dollars with those small business concerns owned and controlled by socially and economically disadvantaged individuals.

(3) 5.0% of planned subcontracting dollars with those small business concerns owned and controlled by women.

(4) 3.0% of planned subcontracting dollars with those small business concerns owned and controlled by Severely Disable Veterans.

(5) 2.5% of planned subcontracting dollars with those small business concerns owned and controlled by HubZones.

d. Submission and Review of Subcontracting Plan.

SUBMISSION OF SMALL BUSINESS SUBCONTRACTING PLAN IS NOT APPLICABLE TO SMALL BUSINESSES.

(1) The apparent low bidder must submit a subcontracting plan within five (5) calendar days after bid opening (a longer period maybe granted by the Contracting Officer upon request) within 24 hours after notification by the Government to the Contracting Activity.]

(2) Goals included in the subcontracting plan should be at least equal to those indicated above. If lesser goals are proposed, the bidder may be required to substantiate how the proposed plan represents the bidder's best effort to comply with the terms and conditions of the solicitation. Bidders are highly encouraged to become familiar with the intent of the solicitation provisions and the elements of the subcontracting plan.

(3) The subcontracting plan must contain, as a minimum, the elements set forth in FAR provision 52.219-9. An example subcontracting plan will be furnished to the apparent low bidder (upon request). The example subcontracting plan (if requested) should not be construed as an acceptable subcontracting plan. Any format will be acceptable provided that the plan addresses each element as required by the Federal Acquisition Regulations and its supplements.

(4) Proposed plans will be reviewed by the Government to ensure the plan represents the firm's best efforts to maximize subcontracting opportunities for small, small disadvantaged and women-owned businesses.

(5) Subcontracting plans are required to be approved prior to Contract Award. The approved subcontracting plan (to include goals) will become a material part of the contract.

e. Failing to Submit An Acceptable Subcontracting Plan. An apparent low bidder failing to submit a subcontracting plan which demonstrates a reasonable effort to meet the goals listed above or provide an explanation why lesser goals are proposed (upon request), will be considered as non-responsive and not considered eligible for award of the contract.

f. Questions or Assistance Needed in Developing Subcontracting Plan. For any questions or assistance needed in developing the subcontracting plan, contact the Contract Specialist or District's Deputing for Small Business (See paragraph: BIDDER QUESTIONS AND COMMENTS, Contract Specialist [Bid Results] or the District's Deputy for Small Business [Small Business] or fax your inquiries to 402-221-4199).

30 (DFARS 252.204-7004) REQUIRED CENTRAL CONTRACTOR REGISTRATION (NOV 2001)

(a) Definitions.

As used in this clause--

(1) "Central Contractor Registration (CCR database" means the primary DoD repository for contractor information required for the conduct of

business with DoD.

(2) "Data Universal Numbering System (DUNS) number" means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) "Data Universal Numbering System +4 (DUNS+4) number" means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) "Registered in the CCR database" means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr.gov>.

(End of clause)

REQUIRED CENTRAL CONTRACTOR REGISTRATION (CCR)

Register Now: Don't wait until you submit an offer on solicitation. You must be registered to receive the contract award. It can often take 30 days for CCR to process your registration information.

Register One of Three Ways:

Internet: <http://www.ccr.gov>

Value Added Network (VAN) for EDI users: Contact your information. If you need to find a VAN look at http://www.acq.osd.mil/ec/ecip/van_list.htm

FAX or Mail: Call (888)227-2423 or (616)961-4725 to receive registration package. FAX or mail the completed information to CCR Assistance Center. It can take up to 30 days to process faxed or mailed package.

CCR Assistance Center
74 Washington Street North, Suite 7
Battle Creek, MI 49017-3084
FAX: (616)961-7243

SECTION 00600
REPRESENTATIONS, CERTIFICATIONS & OTHER STATEMENTS OF BIDDERS

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SECTION 00600
REPRESENTATIONS, CERTIFICATIONS & OTHER STATEMENTS OF BIDDERS

The bidder (offeror) makes the following certification and representations as a part of the bid, shall check the appropriate boxes, fill in the appropriate information, and provide signatures on the attached "Solicitation Form" (00600) pages, and submit with Standard Form 1442 (Section 00010).

1. (FAR 52.203-2) CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that -

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods or factors used to calculate the prices offered;

(2) the prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a Sealed Bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) no attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory -

(1) is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2)(i) has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____

_____ [insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization];

(ii) as an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) as an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

2. (FAR 52.203-11) CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203 -12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989, -

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

3. (FAR 52.204-3) TAXPAYER IDENTIFICATION (OCT 1998).

(a) Definitions.

"Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

[] TIN: _____.

☐ TIN has been applied for.

☐ TIN is not required because:

☐ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

☐ Offeror is an agency or instrumentality of a foreign government;

☐ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

☐ Sole proprietorship;

☐ Partnership;

☐ Corporate entity (not tax-exempt);

☐ Corporate entity (tax-exempt);

☐ Government entity (Federal, State, or local);

☐ Foreign government;

☐ International organization per 26 CFR 1.6049-4;

☐ Other _____.

(f) Common parent.

☐ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

☐ Name and TIN of common parent:

Name _____

TIN _____

(End of provision)

4. (FAR 52.204-5) WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) [MAY 1999]

(a) *Definition.* Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) *Representation.* [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, *Small Business Program Representations*, of this solicitation.] The offeror represents that it ☐ is a women-owned business concern.
(End of provision)

5. (DFARS 252.204-7001) COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999).

(a) The offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter "CAGE" before the number.

(b) If the offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Information Service (DLIS). The Contracting Officer will-

- (1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;
- (2) Complete section A and forward the form to DLIS; and
- (3) Notify the Contractor of its assigned CAGE code.

(c) Do not delay submission of the offer pending receipt of a CAGE code.

6. (FAR 52.209-5) CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (APR 2001).

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that—

(i) The Offeror and/or any of its Principals—

(A) Are ☐ are not ☐ presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ☐ have not ☐, within the three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; **[This language stayed indefinitely. Please use paragraph (a)(1)(i)(D) below.]**

(C) Are ☐ are not ☐ presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision; and **[This language stayed indefinitely. Please use paragraph (a)(1)(i)(E) below.]**

(D) Have ☐ have not ☐, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(E) Are ☐ are not ☐ presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(D) of this provision.

(ii)(A) **[This paragraph (a)(1)(ii) is stayed indefinitely.]** The offeror, aside from the offenses enumerated in paragraphs (a)(1)(i)(A), (B), and (C) of this provision, has ☐ has not ☐ within the past three years, relative to tax, labor and employment, environmental, antitrust, or consumer protection laws—

(1) Been convicted of a Federal or State felony (or has any Federal or State felony indictments currently pending against them); or

(2) Had a Federal court judgment in a civil case brought by the United States rendered against them; or

(3) Had an adverse decision by a Federal administrative law judge, board, or

commission indicating a willful violation of law.

(B) If the offeror has responded affirmatively, the offeror shall provide additional information if requested by the Contracting Officer; and

(iii) The Offeror has [] has not [], within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (*e.g.*, general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.
(End of Provision)

7. (DFARS 252.209-7001) DISCLOSURE OF OWNERSHIP OR CONTROL BY A FOREIGN GOVERNMENT THAT SUPPORTS TERRORISM (MAR 1998). [For Contracts exceeding \$100,000]

(a) Definitions.

As used in this provision-

(1) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A)) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means-

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) Prohibition on award. In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary [or, in the case of a subsidiary, the firm that owns the subsidiary], unless a waiver is granted by the Secretary of Defense.

(c) Disclosure.

The Offeror shall disclose any significant interest the government of each of the following countries has in the Offeror or a subsidiary of the Offeror. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include--

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each Government.

(End of provision)

8. (DFARS 252.209-7003) COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (MAR 1998)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 37 U.S.C. 4212(d) (i.e., the VETS-100 report required by Federal Acquisition Regulation clause 52.222-37, Employment Reports on Disabled Veterans and Veterans of the Vietnam Era), it has submitted the more recent report required by 37 U.S.C. 4212(d).

(End of provision)

9. (FAR 52.211-6) BRAND NAME OR EQUAL (AUG 1999).

(a) If an item in this solicitation is identified as "brand name or equal," the purchase description reflects the characteristics and level of quality that will satisfy the Government's needs. The salient physical, functional, and other characteristics that "equal" products must meet are specified in the solicitation.

(b) To be considered for award, offers of "equal" products, including "equal" products of the brand name manufacturer, must--

(1) Meet the salient physical, functional, and other characteristics specified in the solicitation;

(2) Clearly identify the item by--

(i) Brand name, if any; and

(ii) Make or model number;

(3) Include descriptive literature such as cuts, illustrations, drawings, or a clear reference to previously furnished descriptive data or information available to the Contracting Officer; and

(4) Clearly describe any modifications the offeror plans to make in a product to make it conform to the solicitation requirements. Mark any descriptive material to clearly show the modifications.

(c) The Contracting Officer will evaluate "equal" products on the basis of information by the offeror or identified in the offer and reasonably available to the Contracting Officer. The Contracting Officer is not responsible for locating or securing any information not identified in the offer.

(d) Unless the offeror clearly indicates in its offer that the product being offered is an "equal" product, the offeror shall provide the brand name product referenced in the solicitation.

10. RESERVED

11. RESERVED

12. (FAR 52.219-1) SMALL BUSINESS PROGRAM REPRESENTATIONS (MAY 2001) ALTERNATE I (OCT 2000) ALTERNATE II (OCT 2000)

(a) (1) The North American Industry Classification System (NAICS) code for this acquisition is _____ [insert NAICS code].

(2) The small business size standard is \$_____ (insert size standard).

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it [] is, [] is not a small business concern.

(2) *[Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents, for general statistical purposes, that it [] is, [] is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) *[Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents as part of its offer that it [] is, [] is not a women-owned small business concern.

(4) *[Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents as part of its offer that it [] is, [] is not a veteran-owned small business concern.

(5) *[Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.]* The offeror represents as part of its offer that it [] is, [] is not a service-disabled veteran-owned small business concern.

(6) *[Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents, as part of its offer, that—

- (i) It [] is, [] is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal place of ownership, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and
- (ii) It [] is, [] is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. *[The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.]* Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) *[Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision].* The offeror shall check the category in which its ownership falls:

____ Black American.

____ Hispanic American.

____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

____ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision—

“Service-disabled veteran-owned small business concern”—

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

“Small business concern” means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

“Veteran-owned small business concern” means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

“Women-owned small business concern” means a small business concern—

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) *Notice.* (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, small disadvantaged or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to sections 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall-

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

13. (FAR 52.219-2) EQUAL LOW BIDS (OCT 1995)

(a) This provision applies to small business concerns only.

(b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.

(c) Failure to identify the labor surplus areas as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

14. RESERVED

15. (FARS 52.219-19) SMALL BUSINESS CONCERN REPRESENTATION FOR THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (OCT 2000).

(a) *Definition.* "Emerging small business" as used in this solicitation, means a small business concern whose size is no greater than 50 percent of the numerical size standard applicable to the North American Industry Classification System (NAICS) code assigned to a contracting opportunity.

(b) (Complete only if Offeror has represented itself under the provision at FAR 52.219-1 as a small business concern under the size standards of this solicitation.) The Offeror [] is, [] is not an emerging small business.

(c) (Complete only if the Offeror is a small business or an emerging small business, indicating its size range.)

Offeror's number of employees for the past 12 months (check this column if size standard stated in solicitation is expressed in terms of number of employees) or Offeror's average annual gross revenue for the last 3 fiscal years (check this column if size standard stated in solicitation is expressed in terms of annual receipts). (Check one of the following.)

| No. of Employees | Average Annual Gross Revenues |
|--------------------------------------|--|
| <input type="checkbox"/> 50 or fewer | <input type="checkbox"/> \$1 million or less |
| <input type="checkbox"/> 51 - 100 | <input type="checkbox"/> \$1,000,001 - \$2 million |
| <input type="checkbox"/> 101 - 250 | <input type="checkbox"/> \$2,000,001 - \$3.5 million |
| <input type="checkbox"/> 251 - 500 | <input type="checkbox"/> \$3,500,001 - \$5 million |
| <input type="checkbox"/> 501 - 750 | <input type="checkbox"/> \$5,000,001 - \$10 million |
| <input type="checkbox"/> 751 - 1,000 | <input type="checkbox"/> \$10,000,001 - \$17 million |
| <input type="checkbox"/> Over 1,000 | <input type="checkbox"/> Over \$17 million |

16. (FARS 52.219-21) SMALL BUSINESS SIZE REPRESENTATION FOR TARGETED INDUSTRY CATEGORIES UNDER THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (MAY 1999).

[Complete only if the Offeror has represented itself under the provision at 52.219-1 as a small business concern under the size standards of this solicitation.]

Offeror's number of employees for the past 12 months *[check this column if size standard stated in solicitation is expressed in terms of number of employees]* or Offeror's average annual gross revenue for the last 3 fiscal years *[check this column if size standard in solicitation is expressed in terms of annual receipts]*. *[Check one of the following.]*

| | |
|------------------|-------------------------------|
| No. of Employees | Average Annual Gross Revenues |
|------------------|-------------------------------|

| | |
|------------------|-----------------------------------|
| _____50 or fewer | _____ \$1 million or less |
| _____51 - 100 | _____ \$1,000,001 - \$2 million |
| _____101 - 250 | _____ \$2,000,001 - \$3.5 million |
| _____251 - 500 | _____ \$3,500,001 - \$5 million |
| _____501 - 750 | _____ \$5,000,001 - \$10 million |
| _____751 - 1,000 | _____ \$10,000,001 - \$17 million |
| _____Over 1,000 | _____Over \$17 million |

17. (FAR 52.222-21) CERTIFICATION OF NONSEGREGATED FACILITIES (FEB 1999)

(a) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.
(End of clause)

18. (FAR 52.222-22) PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999).

The offeror represents that—

(a) It [] has, [] has not participated in a previous contract or subcontract subject the Equal Opportunity clause of this solicitation;

(b) It [] has, [] has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

19. (FAR 52.223-4) RECOVERED MATERIAL CERTIFICATION (OCT 1997)

As required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6962(c)(3)(A)(i)), the offeror certifies, by signing this offer, that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by the applicable contract specifications.

(End of provision)

**20. (FAR 52.223-13) CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)
[For Contracts over \$100,000]**

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that-

(1) As the owner or operator of a facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right -to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file, for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject the Form R filing and reporting requirements because each facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

☐ (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

☐ (ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

☐ (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

☐ (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

☐ (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Norther Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

21. (DFARS 252.225-7031) SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any foreign establishment) of any domestic concern which is controlled in fact by such domestic concern, as determined under regulations of the President.

(b) Certification.

By submitting this offer, the Offeror, if a foreign person, company, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

22. (DFARS 252.247-7022) REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992).

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term "supplies" is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) REPRESENTATION. The Offeror represents that it-

_____ Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

_____ Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea Clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

SECTION 00700

CONTRACT CLAUSES

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92. *FAR 52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)
93. FAR 52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)
94. *FAR 52.236-8 OTHER CONTRACTS (APR 1984)
95. *FAR 52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)
96. *FAR 52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)
97. *FAR 52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)
98. *FAR 52.236-12 CLEANING UP (APR 1984)
99. *FAR 52.236-13 ACCIDENT PREVENTION-ALTERNATE I (NOV 1991)
100. *FAR 52.236-14 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)
101. FAR 52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)
102. *FAR 52.236-17 LAYOUT OF WORK (APR 1984)
103. FAR 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)
104. *FAR 52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)
105. DFARS 252.236-7000 MODIFICATION OF PROPOSALS - PRICE BREAKDOWN (DEC 1991)

- 106. DFARS 252.236-7008 CONTRACT PRICES - BIDDING SCHEDULES (DEC 1991)
- 107. *FAR 52.242-13 BANKRUPTCY (JUL 1995)
- 108. *FAR 52.242-14 SUSPENSION OF WORK (APR 1984)
- 109. FAR 52.243-4 CHANGES (AUG 1987)
- 110. DFARS 252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)
- 111. DFARS 252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)
- 112. *FAR 52.244-2 SUBCONTRACTS (AUG 1998)
- 113. FAR 52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (MAY 2001)
- 114. *FAR 52.245-2 GOVERNMENT PROPERTY (FIXED-PRICE CONTRACTS) (DEC 1989) [For Government Property over \$100,000]
- 115. *FAR 52.245-4 GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) (APR 1984) [For Government Property \$100,000 or Less]
- 116. *FAR 52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)
- 117. *FAR 52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)
- 118. DFARS 252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)
- 119. DFARS 252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)
- 120. FAR 52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000) (ALTERNATE I (APR 1984)
- 121. *FAR 52.249-1 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SHORT FORM) (APR 1984) [For Contracts \$100,000 or Less]
- 122. *FAR 52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) ALTERNATE I (SEP 1996) [For Contracts Over \$100,000]
- 123. *FAR 52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)
- 124. ENVIRONMENTAL LITIGATION (1974 NOV OCE)
- 125. EFARS 52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS
- 126. INAPPLICABLE PROVISIONS AND CLAUSES (Local Provision). [Applicable only for projects or delivery orders less than \$100,000]

SECTION 00700

CONTRACT CLAUSES

1. FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>

(End of clause)

* - CONTRACT CLAUSES THAT MAY BE INCORPORATED BY REFERENCE

2. DFARS 252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) Definition.

"Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

3. *FAR 52.202-1 DEFINITIONS (DEC 2001) ALTERNATE I (MAR 2001)

a) "Agency head" or "head of the agency" means the Secretary (Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, unless otherwise indicated, including any deputy or assistant chief official of the executive agency.

(b) "Commercial component" means any component that is a commercial item.

(c) "Commercial item" means—

(1) Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and that—

(i) Has been sold, leased, or licensed to the general public; or

(ii) Has been offered for sale, lease, or license to the general public;

(2) Any item that evolved from an item described in paragraph (c)(1) of this clause through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;

(3) Any item that would satisfy a criterion expressed in paragraphs (c)(1) or (c)(2) of this clause, but for—

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. "Minor" modifications means modifications that do not significantly alter the nongovernmental function or essential physical characteristics of an item or component, or

change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;

(4) Any combination of items meeting the requirements of paragraphs (c)(1), (2), (3), or (5) of this clause that are of a type customarily combined and sold in combination to the general public;

(5) Installation services, maintenance services, repair services, training services, and other services if—

(i) Such services are procured for support of an item referred to in paragraph (c)(1), (2), (3), or (4) of this definition, regardless of whether such services are provided by the same source or at the same time as the item; and

(ii) The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government

(6) Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed under standard commercial terms and conditions. This does not include services that are sold based on hourly rates without an established catalog or market price for a specific service performed. For purposes of these services—

(i) “Catalog price” means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and

(ii) “Market prices” means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors.

(7) Any item, combination of items, or service referred to in paragraphs (c)(1) through (c)(6), notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a Contractor; or

(8) A nondevelopmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local Governments.

(d) “Component” means any item supplied to the Government as part of an end item or of another component, except that for use in 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225-11(a).

(e) “Contracting Officer” means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(f) “Nondevelopmental item” means—

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (f)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (f)(1) or (f)(2) solely because the item is not yet in use.

(End of clause)

4. *FAR 52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

- (b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.
- (c) If this contract is terminated under paragraph (a) above, the Government is entitled--
 - (1) To pursue the same remedies as in a breach of the contract; and
 - (2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)
- (d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

5. *FAR 52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

6. *FAR 52.203-7 ANTI-KICKBACK PROCEDURES (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract. "Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a

subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from--

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c) (1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may

(i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or

(ii) direct that the Prime Contractor withhold from sums owed a subcontractor under the prime contract the amount of the kickback. The Contracting Officer may order that monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

7. *FAR 52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27 (a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsection 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

8. DFARS 252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE—CONTRACT-RELATED FELONIES (MARCH 1999)

- (a) Definitions.
As used in this clause--
 - (1) "Arising out of a contract with the "DoD" means any any act in connection with--
 - (i) Attempting to obtain;
 - (ii) Obtaining; or
 - (iii) Performing a contract or first-tier subcontract of any department, or component of the Department of Defense (DoD).
 - (2) "Conviction of fraud or any other felony," means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of nolo contendere, for which sentence has been imposed.
 - (3) "Date of conviction," means the date judgement was entered against the individual.
- (b) Any individual who is convicted after September 29, 1988 of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--
 - (1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;
 - (2) On board of directors of any DoD Contractor or first-tier subcontractor;
 - (3) As a consultant to any DoD Contractor or first-tier subcontractor; or
 - (4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.
- (c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than five years from the date of conviction.
- (d) 10 U.S.C. 2408 provides that a defense Contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than \$500,000 if convicted of knowingly--
 - (1) Employing a person under a prohibition in paragraph (b) of this clause ;
 - (2) Allowing such a person to serve on the board of directors of Contractor or first-tier subcontractor.
- (e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may c onsider other available remedies, such as--
 - (1) Suspension or debarment;
 - (2) Cancellation of the contract at no cost to the Government; or
 - (3) Termination of the contract for default.
- (f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify--
 - (1) The person involved;
 - (2) The nature of the conviction and resultant sentence or punishment imposed ;
 - (3) The reasons for the requested waiver; and
 - (4) An explanation of why a waiver is in the interest of national security.
- (g) The Contractor agrees to include the substance of this clause appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.
- (h) Pursuant to 10 U.S.C.2408(c), defense contractors and subcontractors may obtain information as to whether a particular has been convicted of fraud or any other felony arising out of a contract with the DoD by contracting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

9. DFARS 252.203-7002 DISPLAY OF DOD HOTLINE POSTER (DEC 1991) (For Military Contracts Exceeding \$5,000,000)

- (a) The Contractor shall display prominently in common work areas within business segments performing work under Department of Defense (DoD) contracts, DoD Hotline Posters prepared by DoD Office of the Inspector General.

(b) DoD Hotline Posters may be obtained from the DoD Inspector General, ATTN: Defense Hotline, 400 Army Navy Drive, Washington DC 22202-2884.

(c) The Contract need not comply with paragraph (a) of this clause if it has established a mechanism, such as a hotline, by which employees may report suspected instances of improper conduct, and instructions that encourage employees to make such reports.

10. *FAR 52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27(a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

11. *FAR 52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal Action," as used in this clause, means any of the following Federal actions:

(1) The awarding of any Federal contract.

(2) The making of any Federal grant.

(3) The making of any Federal loan.

(4) The entering into of any cooperative agreement.

(5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

(1) An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment.

(2) A member of the uniformed services, as defined in subsection 101(3), title 37, United States Code.

(3) A special Government employee, as defined in section 202, title 18, United States Code.

(4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of title 31, United States Code, among other things, prohibits a recipient of a Federal Contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: The awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or

negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(iii) Disclosure.

(A) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(B) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(C) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(D) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(iv) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(v) Penalties.

(A) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(B) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(vi) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

12. *FAR 52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause—

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.” For paper and paper products, postconsumer material means “postconsumer fiber” defined by the U.S. Environmental Protection Agency (EPA) as—

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

“Printed or copied double-sided” means printing or reproducing a document so that information is on both sides of a sheet of paper.

“Recovered material,” for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as “recovered fiber” and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as—

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.
(End of clause)

13. DFARS 252.204-7003

CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the Contractor.

14. *FAR 52.209-6 PROTECTING THE GOVERNMENTS INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of \$25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed \$25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principals, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Procurement Programs). The notice must include the following:

- (1) The name of the subcontractor.
- (2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Procurement Programs.
- (3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded From Procurement Programs.
- (4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

15. DFARS 252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of \$25,000 with a firm, or a subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor and the compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

(End of clause)

16. *FAR 52.211-15 DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS (SEP 1990) [For Military Contract's Only]

This is a rated order certified for national defense use, and the Contractor shall follow all the requirements of the Defense Priorities and Allocations System regulation (15 CFR 700).

17. FAR 52.211-18 VARIATION IN ESTIMATED QUANTITY (APR 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting

Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.

18. *FAR 52.214-26 AUDIT AND RECORDS--SEALED BIDDING (OCT 1997)

(a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Cost or pricing data. If the Contractor has submitted cost or pricing data in connection with the pricing of any modification to this contract, the Contracting Officer or authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections related to--

- (1) The proposal for the modification;
- (2) The discussions conducted on the proposal(s), including those related to negotiating ;
- (3) Pricing of the modification; or
- (4) Performance of the modification.

(c) Comptroller General. In the case of pricing any modification, the Comptroller General of the United States, or an authorized representative, shall have the same rights as specified in paragraph (b) of this clause.

(d) Availability. The Contractor shall make available at its office at all reasonable times the materials described in paragraph (b) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract, or for any other period specified in Subpart 4.7 of the Federal Acquisition Regulation (FAR). FAR Subpart 4.7, Contractor Records Retention, in effect on the date of this contract, is incorporated by reference in its entirety and made a part of this contract.

(1) If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement.

(2) Records pertaining to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to the performance of this contract shall be made available until disposition of such appeals, litigation, or claims.

(e) The Contractor shall insert a clause containing all the provisions of this clause, including this paragraph (e), in all subcontracts expected to exceed the threshold in FAR 15.403-4(a)(1) for submission of cost or pricing data.

**19. *FAR 52.214-27 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA—
MODIFICATIONS--SEALED BIDDING (OCT 1997)**

(a) This clause shall become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), except that this clause does not apply to any modification if an exception under FAR 15.403-1(b) applies.

(b) If any price, including profit, negotiated in connection with any modification under this clause, was increased by any significant amount because

(1) The Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data,

(2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data, or

(3) Any of these parties furnished data of any description that were not accurate, the price shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) of this clause.

- (c) Any reduction in the contract price under paragraph (b) above due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which
- (1) the actual subcontract or
 - (2) the actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.
- (d) (1) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:
- (i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.
 - (ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.
 - (iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.
 - (iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.
- (2) (i) Except as prohibited by subdivision (d)(2)(ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--
- (A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and
 - (B) The Contractor proves that the cost or pricing data were available before the date of agreement on the price of the contract (or price of the modification) and that the data were not submitted before such date.
- (ii) An offset shall not be allowed if--
- (A) The understated data was known by the Contractor to be understated when the Certificate of Current Cost or Pricing Data was signed; or
 - (B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the date of agreement on price.
- (e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--
- (1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and
 - (2) A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data which were incomplete, inaccurate, or noncurrent.

20. *FAR 52.214-28 SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS--SEALED BIDDING (OCT 1997)

- (a) The requirements of paragraphs (b) and (c) of this clause shall--
- (1) Become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1); and

(2) Be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1(b) applies.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR subsection 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (b) above were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(d) The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that when entered into, exceeds the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1).

(End of clause)

21. *FAR 52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) *Definition.* "HUBZone small business concern," as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) *Evaluation preference.* (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except—

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer. These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) *Waiver of evaluation preference.* A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

[] Offeror elects to waive the evaluation preference.

(d) *Agreement.* A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for—

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone

small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

22. *FAR 52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

(c) *Definitions.* As used in this contract—

“HUBZone small business concern” means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration .

“Service-disabled veteran-owned small business concern ” —

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

“Small business concern” means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

“Small disadvantaged business concern” means a small business concern that represents, as part of its offer that—

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, Subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

“Veteran-owned small business concern” means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

“Women-owned small business concern” means a small business concern—

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

23. *FAR 52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (OCT 2001) [When Contracting By Negotiations]

(a) This clause does not apply to small business concerns.

(b) *Definitions.* As used in this clause—

“Commercial item” means a product or service that satisfies the definition of commercial item in section 2.101 of the Federal Acquisition Regulation.

“Commercial plan” means a subcontracting plan (including goals) that covers the offeror’s fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (e.g., division, plant, or product line).

“Individual contract plan” means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror’s planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

“Master plan” means a subcontracting plan that contains all the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

“Subcontract” means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) The offeror, upon request by the Contracting Officer, shall submit and negotiate a subcontracting plan, where applicable, that separately addresses subcontracting with small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business concerns, small disadvantaged business, and women-owned small business concerns. If the offeror is submitting an individual contract plan, the plan must separately address subcontracting with small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract. The subcontracting plan shall be negotiated within the time specified by the Contracting Officer. Failure to submit and negotiate the subcontracting plan shall make the offeror ineligible for award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. Service-disabled veteran-owned small business concerns meet the definition of veteran-

owned small business concerns, and offerors may include them within the subcontracting plan goal for veteran-owned small business concerns. A separate goal for service-disabled veteran-owned small business concerns is not required. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of—

(i) Total dollars planned to be subcontracted for an individual contract plan; or the offeror's total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan;

(ii) Total dollars planned to be subcontracted to small business concerns;

(iii) Total dollars planned to be subcontracted to veteran-owned small business concerns;

(iv) Total dollars planned to be subcontracted to service-disabled veteran-owned small business;

(v) Total dollars planned to be subcontracted to HUBZone small business concerns;

(vi) Total dollars planned to be subcontracted to small disadvantaged business concerns; and

(vii) Total dollars planned to be subcontracted to women-owned small business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) Service-disabled veteran-owned small business concerns;

(iv) HUBZone small business concerns;

(v) Small disadvantaged business concerns; and

(vi) Women-owned small business concerns.

(4) A description of the method used to develop the subcontracting goals in paragraph (d)(1) of this clause.

(5) A description of the method used to identify potential sources for solicitation purposes (*e.g.*, existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration (SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone, small disadvantaged, and women-owned small business trade associations). A firm may rely on the information contained in PRO-Net as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source list. Use of PRO-Net as its source list does not relieve a firm of its responsibilities (*e.g.*, outreach, assistance, counseling, or publicizing subcontracting opportunities) in this clause.

(6) A statement as to whether or not the offeror included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) Service-disabled veteran-owned small business concerns;

(iv) HUBZone small business concerns;

(v) Small disadvantaged business concerns; and

(vi) Women-owned small business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause of this contract entitled "Utilization of Small Business Concerns" in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) that receive subcontracts in excess of \$500,000 (\$1,000,000 for construction of any public facility) to adopt a subcontracting plan that complies with the

requirements of this clause.

(10) Assurances that the offeror will—

(i) Cooperate in any studies or surveys as may be required;

(ii) Submit periodic reports so that the Government can determine the extent of compliance by the offeror with the subcontracting plan;

(iii) Submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with paragraph (j) of this clause. The reports shall provide information on subcontract awards to small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, women-owned small business concerns, and Historically Black Colleges and Universities and Minority Institutions. Reporting shall be in accordance with the instructions on the forms or as provided in agency regulations.

(iv) Ensure that its subcontractors agree to submit SF 294 and SF 295.

(11) A description of the types of records that will be maintained concerning procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of the offeror's efforts to locate small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated):

(i) Source lists (*e.g.*, PRO-Net), guides, and other data that identify small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns.

(ii) Organizations contacted in an attempt to locate sources that are small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, or women-owned small business concerns.

(iii) Records on each subcontract solicitation resulting in an award of more than \$100,000, indicating—

(A) Whether small business concerns were solicited and, if not, why not;

(B) Whether veteran-owned small business concerns were solicited and, if not, why not;

(C) Whether service-disabled veteran-owned small business concerns were solicited and, if not, why not;

(D) Whether HUBZone small business concerns were solicited and, if not, why not;

(E) Whether small disadvantaged business concerns were solicited and, if not, why not;

(F) Whether women-owned small business concerns were solicited and, if not, why not; and

(G) If applicable, the reason award was not made to a small business concern.

(iv) Records of any outreach efforts to contact—

(A) Trade associations;

(B) Business development organizations;

(C) Conferences and trade fairs to locate small, HUBZone small, small disadvantaged, and women-owned small business sources; and

(D) Veterans service organizations.

(v) Records of internal guidance and encouragement provided to buyers through—

(A) Workshops, seminars, training, etc.; and

(B) Monitoring performance to evaluate compliance with the program's requirements.

(vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having commercial plans need not comply with this requirement.

(e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:

(1) Assist small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(2) Provide adequate and timely consideration of the potentialities of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns in all "make-or-buy" decisions.

(3) Counsel and discuss subcontracting opportunities with representatives of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business firms.

(4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small, veteran-owned small business, HUBZone small, small disadvantaged, or women-owned small business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master plan on a plant or division-wide basis that contains all the elements required by paragraph (d) of this clause, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided —

(1) The master plan has been approved;

(2) The offeror ensures that the master plan is updated as necessary and provides copies of the approved master plan, including evidence of its approval, to the Contracting Officer; and

(3) Goals and any deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial items. The commercial plan shall relate to the offeror's planned subcontracting generally, for both commercial and Government business, rather than solely to the Government contract. Commercial plans are also preferred for subcontractors that provide commercial items under a prime contract, whether or not the prime contractor is supplying a commercial item.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with—

(1) The clause of this contract entitled "Utilization Of Small Business Concerns;" or

(2) An approved plan required by this clause, shall be a material breach of the contract.

(j) The Contractor shall submit the following reports:

(1) *Standard Form 294, Subcontracting Report for Individual Contracts*. This report shall be submitted to the Contracting Officer semiannually and at contract completion. The report covers subcontract award data related to this contract. This report is not required for commercial plans.

(2) *Standard Form 295, Summary Subcontract Report*. This report encompasses all of the contracts with the awarding agency. It must be submitted semi-annually for contracts with the Department of Defense and annually for contracts with civilian agencies. If the reporting activity is covered by a commercial plan, the reporting activity must report annually all subcontract awards under that plan. All reports submitted at the close of each fiscal year (both individual and commercial plans) shall include a breakout, in the Contractor's format, of subcontract awards, in whole dollars, to small disadvantaged business concerns by North American Industry Classification System (NAICS) Industry Subsector. For a commercial plan, the Contractor may obtain from each of its subcontractors a predominant NAICS Industry Subsector and report all awards to that subcontractor under its predominant NAICS Industry Subsector.

(End of clause)

24. *FAR 52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (OCT 2001) --ALTERNATE I (OCT 2001) [When Contracting By Sealed Bidding]

(a) This clause does not apply to small business concerns.

(b) *Definitions*. As used in this clause—

“Commercial item” means a product or service that satisfies the definition of commercial item in section 2.101 of the Federal Acquisition Regulation.

“Commercial plan” means a subcontracting plan (including goals) that covers the offeror’s fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (*e.g.*, division, plant, or product line).

“Individual contract plan” means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror’s planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

“Master plan” means a subcontracting plan that contains all the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

“Subcontract” means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) The apparent low bidder, upon request by the Contracting Officer, shall submit a subcontracting plan, where applicable, that separately addresses subcontracting with small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns. If the bidder is submitting an individual contract plan, the plan must separately address subcontracting with small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract. The subcontracting plan shall be submitted within the time specified by the Contracting Officer. Failure to submit the subcontracting plan shall make the bidder ineligible for the award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. Service-disabled veteran-owned small business concerns meet the definition of veteran-owned small business concerns, and offerors may include them within the subcontracting plan goal for veteran-owned small business concerns. A separate goal for service-disabled veteran-owned small business concerns is not required. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of—

(i) Total dollars planned to be subcontracted for an individual contract plan; or the offeror’s total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan;

(ii) Total dollars planned to be subcontracted to small business concerns;

(iii) Total dollars planned to be subcontracted to veteran-owned small business concerns;

(iv) Total dollars planned to be subcontracted to service-disabled veteran-owned small business;

(v) Total dollars planned to be subcontracted to HUBZone small business concerns;

(vi) Total dollars planned to be subcontracted to small disadvantaged business concerns; and

(vii) Total dollars planned to be subcontracted to women-owned small business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) Service-disabled veteran-owned small business concerns;

(iv) HUBZone small business concerns;

(v) Small disadvantaged business concerns; and

(vi) Women-owned small business concerns.

(4) A description of the method used to develop the subcontracting goals in paragraph (d)(1) of this clause.

(5) A description of the method used to identify potential sources for solicitation purposes (*e.g.*, existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration (SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone, small disadvantaged, and women-owned small business trade associations). A firm may rely on the information contained in PRO-Net as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source list. Use of PRO-Net as its source list does not relieve a firm of its responsibilities (*e.g.*, outreach, assistance, counseling, or publicizing subcontracting opportunities) in this clause.

(6) A statement as to whether or not the offeror included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with—

- (i) Small business concerns;
- (ii) Veteran-owned small business concerns;
- (iii) Service-disabled veteran-owned small business concerns;
- (iv) HUBZone small business concerns;
- (v) Small disadvantaged business concerns; and
- (vi) Women-owned small business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause of this contract entitled "Utilization of Small Business Concerns" in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) that receive subcontracts in excess of \$500,000 (\$1,000,000 for construction of any public facility) to adopt a subcontracting plan that complies with the requirements of this clause.

(10) Assurances that the offeror will—

- (i) Cooperate in any studies or surveys as may be required;
- (ii) Submit periodic reports so that the Government can determine the extent of compliance by the offeror with the subcontracting plan;
- (iii) Submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with paragraph (j) of this clause. The reports shall provide information on subcontract awards to small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, women-owned small business concerns, and Historically Black Colleges and Universities and Minority Institutions. Reporting shall be in accordance with the instructions on the forms or as provided in agency regulations.

(iv) Ensure that its subcontractors agree to submit SF 294 and SF 295.

(11) A description of the types of records that will be maintained concerning procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of the offeror's efforts to locate small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated):

(i) Source lists (*e.g.*, PRO-Net), guides, and other data that identify small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns.

(ii) Organizations contacted in an attempt to locate sources that are small business,

veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, or women-owned small business concerns.

(iii) Records on each subcontract solicitation resulting in an award of more than \$100,000, indicating—

- (A) Whether small business concerns were solicited and, if not, why not;
- (B) Whether veteran-owned small business concerns were solicited and, if not, why not;
- (C) Whether service-disabled veteran-owned small business concerns were solicited and, if not, why not;
- (D) Whether HUBZone small business concerns were solicited and, if not, why not;
- (E) Whether small disadvantaged business concerns were solicited and, if not, why not;
- (F) Whether women-owned small business concerns were solicited and, if not, why not; and
- (G) If applicable, the reason award was not made to a small business concern.

(iv) Records of any outreach efforts to contact—

- (A) Trade associations;
- (B) Business development organizations;
- (C) Conferences and trade fairs to locate small, HUBZone small, small disadvantaged, and women-owned small business sources; and
- (D) Veterans service organizations.

(v) Records of internal guidance and encouragement provided to buyers through—

- (A) Workshops, seminars, training, etc.; and
- (B) Monitoring performance to evaluate compliance with the program's requirements.

(vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having commercial plans need not comply with this requirement.

(e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:

(1) Assist small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(2) Provide adequate and timely consideration of the potentialities of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns in all "make-or-buy" decisions.

(3) Counsel and discuss subcontracting opportunities with representatives of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business firms.

(4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small, veteran-owned small business, HUBZone small, small disadvantaged, or women-owned small business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master plan on a plant or division-wide basis that contains all the elements required by paragraph (d) of this clause, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided —

- (1) The master plan has been approved;
- (2) The offeror ensures that the master plan is updated as necessary and provides copies of the approved master plan, including evidence of its approval, to the Contracting Officer; and

(3) Goals and any deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial items. The commercial plan shall relate to the offeror's planned subcontracting generally, for both commercial and Government business, rather than solely to the Government contract. Commercial plans are also preferred for subcontractors that provide commercial items under a prime contract, whether or not the prime contractor is supplying a commercial item.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with—

(1) The clause of this contract entitled "Utilization Of Small Business Concerns;" or

(2) An approved plan required by this clause, shall be a material breach of the contract.

(j) The Contractor shall submit the following reports:

(1) *Standard Form 294, Subcontracting Report for Individual Contracts*. This report shall be submitted to the Contracting Officer semiannually and at contract completion. The report covers subcontract award data related to this contract. This report is not required for commercial plans.

(2) *Standard Form 295, Summary Subcontract Report*. This report encompasses all of the contracts with the awarding agency. It must be submitted semi-annually for contracts with the Department of Defense and annually for contracts with civilian agencies. If the reporting activity is covered by a commercial plan, the reporting activity must report annually all subcontract awards under that plan. All reports submitted at the close of each fiscal year (both individual and commercial plans) shall include a breakout, in the Contractor's format, of subcontract awards, in whole dollars, to small disadvantaged business concerns by North American Industry Classification System (NAICS) Industry Subsector. For a commercial plan, the Contractor may obtain from each of its subcontractors a predominant NAICS Industry Subsector and report all awards to that subcontractor under its predominant NAICS Industry Subsector.

(End of clause)

25. DFARS 252.219-7009 SECTION 8(a) DIRECT AWARD (JUN 1998) [When Competitive 8(a) Contracting Procedures are used]

(a) This contract is issued as a direct award between the contracting office and the 8(a) Contractor pursuant to the Memorandum of Understanding dated May 6, 1998, between the Small Business Administration (SBA) and the Department of Defense. Accordingly, the SBA is not a party to this contract. SBA does retain responsibility for 8(a) certification, for 8(a) eligibility determinations and related issues, and for providing counseling and assistance to the 8(a) Contractor under the 8(a) Program. The cognizant SBA district office is:

[To be completed by the Contracting Officer at the time of award]

(b) The contracting office is responsible for administering the contract and for taking any action on behalf of the Government under the terms and conditions of the contract; provided that the contracting office shall give advance notice to the SBA before it issues a final notice terminating performance, either in whole or in part, under the contract. The contracting office also shall coordinate with the SBA prior to processing any novation agreement. The contracting office may assign contract administration functions to a contract administration office.

(c) The Contractor agrees that--

(1) It will notify the Contracting Officer, simultaneous with its notification to the SBA (as required by SBA's 8(a) regulations at 13 CFR 124.308), when the owner or owners upon whom 8(a) eligibility is based plan to relinquish ownership or control of the concern. Consistent with Section 407 of Pub. L. 100-656, transfer of ownership or control shall result in termination of the contract for convenience, unless the SBA waives the requirement for termination prior to the actual relinquishing of ownership and control; and

(2) It will not subcontract the performance of any of the requirements of this contract without the prior written approval of the SBA and the Contracting Officer.

(End of clause)

26. *FAR 52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996) [For Small Business Set Aside Only]

- (a) This clause does not apply to the unrestricted portion of a partial set-aside.
- (b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in performance of the contract in the case of a contract for--
 - (1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.
 - (2) Supplies (other than procurement from a nonmanufacturer of such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.
 - (3) General construction. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.
 - (4) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

27. *FAR 52.219-16 LIQUIDATED DAMAGES-SUBCONTRACTING PLAN (JAN 1999)

(a) Failure to make a good faith effort to comply with the subcontracting plan, as used in this clause, means a willful or intentional failure to perform in accordance with the requirements of the subcontracting plan approved under the clause in this contract entitled "Small Business Subcontracting Plan," or willful or intentional action to frustrate the plan.

(b) Performance shall be measured by applying the percentage goals to the total actual subcontracting dollars or, if a commercial plan is involved, to the pro rata share of actual subcontracting dollars attributable to Government contracts covered by the commercial plan. If, at contract completion, or in the case of a commercial plan, at the close of the fiscal year for which the plan is applicable, the Contractor has failed to meet its subcontracting goals and the Contracting Officer decides in accordance with paragraph (c) of this clause that the Contractor failed to make a good faith effort to comply with its subcontracting plan, established in accordance with the clause in this contract entitled "Small Business Subcontracting Plan," the Contractor shall pay the Government liquidated damages in an amount stated. The amount of probable damages attributable to the Contractor's failure to comply shall be an amount equal to the actual dollar amount by which the Contractor failed to achieve each subcontract goal.

(c) Before the Contracting Officer makes a final decision that the Contractor has failed to make such good faith effort, the Contracting Officer shall give the Contractor written notice specifying the failure and permitting the Contractor to demonstrate what good faith efforts have been made and to discuss the matter. Failure to respond to the notice may be taken as an admission that no valid explanation exists. If, after consideration of all the pertinent data, the Contracting Officer finds that the Contractor failed to make a good faith effort to comply with the subcontracting plan, the Contracting Officer shall issue a final decision to that effect and require that the Contractor pay the Government liquidated damages as provided in paragraph (b) of this clause.

(d) With respect to commercial plans, the Contracting Officer who approved the plan will perform the functions of the Contracting Officer under this clause on behalf of all agencies with contracts covered by a commercial plan.

(e) The Contractor shall have the right of appeal, under the clause in this contract entitled, Disputes, from many final decision of the Contracting Officer.

(f) Liquidated damages shall be in addition to any other remedies that the Government may have.

28. DFARS 252.219-7010 ALTERNATE A (JUN 1998) [When Competitive 8(a) Contracting Procedures are used]

As prescribed in 219.811-3(2), substitute the following paragraph (c) for paragraph (c) of the clause at FAR 52.219-18:

(c) Any award resulting from this solicitation will be made directly by the Contracting Officer to the successful 8(a) offeror selected through the evaluation criteria set forth in this solicitation.

29. FAR 52.219-18 NOTIFICATION OF COMPETITION LIMITED TO ELIGIBLE 8(A) CONCERNS (JUNE 1999) [When Competitive 8(a) Contracting Procedures are used]

(a) Offers are solicited only from small business concerns expressly certified by the Small Business Administration (SBA) for participation in the SBA's 8(a) Program and which meet the following criteria at the time of submission of offer-

(1) The Offeror is in conformance with the 8(a) support limitation set forth in its approved business plan; and

(2) The Offeror is in conformance with the Business Activity Targets set forth in its approved business plan or any remedial action directed by the SBA.

(b) By submission of its offer, the Offeror represents that it meets all of the criteria set forth in paragraph (a) of this clause.

(c) Any award resulting from this solicitation will be made to the Small Business Administration, which will subcontract performance to the successful 8(a) offeror selected through the evaluation criteria set forth in this solicitation.

(d) (1) Agreement. A small business concern submitting an offer in its own name agrees to furnish, in performing the contract, only end items manufactured or produced by small business concerns in the United States. The term "United States" includes its territories and possessions, the Commonwealth of Puerto Rico, the Trust Territory of the Pacific Islands, and the District of Columbia. If this procurement is processed under simplified acquisition procedures and the total amount of this contract does not exceed \$25,000, a small business concern may furnish the product of any domestic firm. This subparagraph does not apply in connection with construction or service contracts.

(2) The [insert name of SBA's contractor] will notify the U.S. Army Corps of Engineers Contracting Officer in writing immediately upon entering an agreement (either oral or written) to transfer all or part of its stock or other ownership interest to any other party.

(End of clause)

30. DFARS 252.219-7003 SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (DOD CONTRACTS) (APR 1996)

This clause supplements the Federal Acquisition Regulation 52.219-9, Small , Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, clause of this contract.

(a) Definitions.

"Historically black colleges and universities," as used in this clause, means institutions determined by the Secretary of Education to meet the requirements of 34 CFR Section 608.2. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

"Minority institutions," as used in this clause, means institutions meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in Section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1)).

(b) Except for company or division-wide commercial products subcontracting plans, the term "small disadvantaged business," when used in the FAR 52.219-9 clause, includes historically black colleges and universities and minority institutions in addition to small disadvantaged business concerns.

(c) Work under the contract or its subcontracts shall be credited toward meeting the small disadvantaged business concern goal required by paragraph (d) of the FAR 52.219-9 clause when:

(1) It is performed on Indian lands or in joint venture with an Indian tribe or a tribally-owned corporation, and

(2) It meets the requirements of 10 U.S.C. 2323a.

(d) Subcontracts awarded to workshops approved by the Committee for Purchase from People Who are Blind or Severely Disabled (41 U.S.C. 46-48), may be counted toward the Contractor's small business subcontracting goal.

(e) A mentor firm, under the Pilot Mentor-Protege Program established under Section 831 of Pub. L. 101-510, as amended, may count toward its small disadvantaged business goal, subcontracts awarded--

(1) Protege firms which are qualified organizations employing the severely handicapped; and

(2) Former protege firms that meet the criteria in Section 831(g)(4) of Pub. L. 101-510.

(f) The master plan approval referred to in paragraph (f) of the FAR 52.219-9 clause is approval by the Contractor's cognizant contract administration activity.

(g) In those subcontracting plans which specifically identify small, small disadvantaged, and women-owned businesses, the Contractor shall notify the Administrative Contracting Officer of any substitutions of firms that are not small, small disadvantaged, or women-owned small businesses for the firms listed in the subcontracting plan. Notifications shall be in writing and shall occur within a reasonable period of time after award of the subcontract. Contractor-specified formats shall be acceptable.

31. DFARS 252.219-7004 SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (TEST PROGRAM) (JUN 1997)

(a) Definition. "Subcontract," as used in this clause, means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(b) The Offeror's comprehensive small business subcontracting plan and its successors, which are authorized by and approved under the test program of Section 834 of Pub. L. 101-189, shall be included in and made a part of the resultant contract. Upon expulsion from the test program or expiration of the test program, the Contractor shall negotiate an individual subcontracting plan for all future contracts that meet the requirements of Section 211 of Publ. L. 95-507.

(c) The Contractor shall submit Standard Form 295, Summary Subcontract Report, in accordance with the instructions on the form, except--

(1) One copy of SF 295 and attachments shall be submitted to Director, Small and Disadvantaged Business Utilization, Office of the Deputy Under Secretary of Defense (International and Commercial Programs), 3061 Defense Pentagon, Room 2A338, Washington, DC 20301-3061; and

(2) Item 14, Remarks, shall be completed to include semi-annual cumulative--

(1) Small business, small disadvantaged business and women-owned small business goals; and

(2) Small business and small disadvantaged business goals, actual accomplishments, and percentages for each of the two designated industry categories.

(d) The failure of the Contractor or subcontractor to comply in good faith with (1) the clause of this contract entitled "Utilization of Small, Small Disadvantaged and Women-Owned Small Business Concerns," or (2) an approved plan required by this clause, shall be a material breach of the contract.

32. *FAR 52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if --

- (a) (1) The worker is paid or is in an approved work training program on a voluntary basis;
 - (2) Representatives of local union central bodies or similar labor union organizations have been consulted;
 - (3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and
 - (4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and
- (b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

33. *FAR 52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT—OVERTIME COMPENSATION (SEPT 2000)

(a) *Overtime requirements.* No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.

(b) *Violation; liability for unpaid wages; liquidated damages.* The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of \$10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) *Withholding for unpaid wages and liquidated damages.* The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) *Payrolls and basic records.* (1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act .

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or

Department of Labor to interview employees in the workplace during working hours.

(e) *Subcontracts*. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding \$100,000 and require subcontractors to include these provisions in any lower-tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

34. *FAR 52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b) (1) The Contracting Officer shall require that any class of laborers or mechanics, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

35. *FAR 52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

36. *FAR 52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b) (1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete ;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

37. *FAR 52.222-9 APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will not longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

38. *FAR 52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

39. *FAR 52.222-11 SUBCONTRACTS (LABOR STANDARDS) (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination--Debarment, Disputes Concerning Labor Standards, Compliance with Davis-Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b) (1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

40. *FAR 52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis-Bacon and Related Act Regulations, or

Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

41. *FAR 52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

42. *FAR 52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency the U.S. Department of Labor, or the employees of their representatives.

43. *FAR 52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

44. *FAR 52.222-26 EQUAL OPPORTUNITY (FEB 1999)

(a) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with subparagraphs (b)(1) through (11) of this clause. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(b) During performing this contract, the Contractor agrees as follows:

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraph (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the Contracting Officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

45. *FAR 52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions.

"Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly Federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade each such subcontract in excess of \$10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee

programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

- (6) Disseminate the Contractor's equal employment policy by--
 - (i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;
 - (ii) Including the policy in any policy manual and in collective bargaining agreements;
 - (iii) Publicizing the policy in the company newspaper, annual report, etc. ;
 - (iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and
 - (v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.
- (7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- (8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.
- (9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- (10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.
- (11) Validate all tests and other selection requirements where required under 41 CFR 60-3.
- (12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.
- (13) Ensure that seniority practices job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.
- (14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- (15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- (16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.
- (h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--
 - (1) Actively participates in the group;
 - (2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry ;

(3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

(4) Makes a good-faith effort to meet its individual goals and timetables; and

(5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.

(j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

(m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to--

(1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;

(2) Submit reports as may be required by the Government; and

(3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

(o) Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

46. *FAR 52.222-35 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) *Definitions.* As used in this clause—

“All employment openings” means all positions except executive and top management, those positions that will be filled from within the Contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days duration, and part-time employment.

“Executive and top management” means any employee—

(1) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;

(2) Who customarily and regularly directs the work of two or more other employees;

(3) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of

other employees will be given particular weight;

(4) Who customarily and regularly exercises discretionary powers; and

(5) Who does not devote more than 20 percent or, in the case of an employee of a retail or service establishment, who does not devote more than 40 percent of total hours of work in the work week to activities that are not directly and closely related to the performance of the work described in paragraphs

(1) through (4) of this definition. This paragraph (5) does not apply in the case of an employee who is in sole charge of an establishment or a physically separated branch establishment, or who owns at least a 20 percent interest in the enterprise in which the individual is employed.

“Other eligible veteran” means any other veteran who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

“Positions that will be filled from within the Contractor's organization” means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings the Contractor proposes to fill from regularly established “recall” lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

“Qualified special disabled veteran” means a special disabled veteran who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position such veteran holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

“Special disabled veteran” means—

(1) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability—

(i) Rated at 30 percent or more; or

(ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap (*i.e.*, a significant impairment of the veteran's ability to prepare for, obtain, or retain employment consistent with the veteran's abilities, aptitudes, and interests); or

(2) A person who was discharged or released from active duty because of a service-connected disability.

“Veteran of the Vietnam era” means a person who—

(1) Served on active duty for a period of more than 180 days and was discharged or released from active duty with other than a dishonorable discharge, if any part of such active duty occurred—

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases; or

(2) Was discharged or released from active duty for a service-connected disability if any part of the active duty was performed—

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases.

(b) *General.* (1) The Contractor shall not discriminate against the individual because the individual is a special disabled veteran, a veteran of the Vietnam era, or other eligible veteran, regarding any position for which the employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans without discrimination based upon their disability or veterans' status in all employment practices such as—

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;

(iii) Rate of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for

leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor including social or recreational programs;

and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(c) *Listing openings.* (1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local public employment service office of the State wherein the opening occurs. Listing employment openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.

(2) The Contractor shall make the listing of employment openings with the local employment service office at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State public employment agency in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency when it is no longer bound by this contract clause.

(d) *Applicability.* This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Virgin Islands of the United States, and Wake Island.

(e) *Postings.* (1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall—

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, and other eligible veterans; and

(ii) Be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary of Labor), and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement, or other contract understanding, that the Contractor is bound by the terms of the Act and is committed to take affirmative action to employ, and advance in employment, qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans.

(f) *Noncompliance.* If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(g) *Subcontracts.* The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of \$25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Deputy Assistant Secretary of Labor to enforce the terms, including action for noncompliance.

(End of clause)

47. *FAR 52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General.

(1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

- (i) Recruitment, advertising, and job application procedures;
- (ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;
- (iii) Rates of pay or other forms of compensation and changes in compensation;
- (iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;
- (v) Leaves of absence, sick leave, or any other leave;
- (vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;
- (vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;
- (viii) Activities sponsored by the Contractor, including social or recreational programs; and
- (ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings.

- (1) The Contractor agrees to post employment notices stating--
 - (i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and
 - (ii) The rights of applicants and employees.
- (2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.
- (3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

48. *FAR 52.222-37 EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on—

- (1) The number of special disabled veterans, the number of veterans of the Vietnam era, and other

eligible veterans in the workforce of the Contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of the total, the number of special disabled veterans, the number of veterans of the Vietnam era, and the number of other eligible veterans; and

(3) The maximum number and the minimum number of employees of the Contractor during the period covered by the report.

(b) The Contractor shall report the above items by completing the Form VETS-100, entitled "Federal Contractor Veterans' Employment Report (VETS-100 Report)".

(c) The Contractor shall submit VETS-100 Reports no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date—

(1) As of the end of any pay period between July 1 and August 31 of the year the report is due; or

(2) As of December 31, if the Contractor has prior written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The Contractor shall base the count of veterans reported according to paragraph (a) of this clause on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all special disabled veterans, veterans of the Vietnam era, and other eligible veterans who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that—

(1) The information is voluntarily provided;

(2) The information will be kept confidential;

(3) Disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and

(4) The information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of \$25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor.

(End of clause)

49. *FAR 52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (*i.e.*, if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

(End of provision)

50. *FAR 52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (APR 1998) [For Work on Federal Facilities]

(a) Executive Order 12856 of August 3, 1993, requires Federal facilities to comply with the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11001-11050) and the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13101-13109).

(b) The Contractor shall provide all information needed by the Federal facility to comply with the emergency planning reporting requirements of Section 302 of EPCRA; the emergency notice requirements of Section 304 of EPCRA; the list of Material Safety Data Sheets required by Section 311 of EPCRA; the emergency and hazardous chemical inventory forms of Section 312 of EPCRA; the toxic chemical release inventory of Section

313 of EPCRA, which includes the reduction and recycling information required by Section 6607 of PPA; and the toxic chemical reduction goals requirements of Section 3-302 of Executive Order 12856.

51. *FAR 52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(a) Definitions. As used in this clause--

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract where employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall--within 30 days after awarded (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance

programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations

occurring in the workplace.

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.560, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

52. FAR 52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED PRODUCTS (AUG 2000) [For Contracts exceeding \$100,000. EPA Designated product (available at <http://www.epa.gov/cpg/>)]

(a) Definitions. As used in this clause—

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.”

“Recovered material” means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall—

(1) Estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of postconsumer material content; and

(2) Submit this estimate to the Contracting Officer.

(End of clause)

53. *FAR 52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000) [For Contracts Over \$100,000]

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor owned or operated facility use in the performance of this contract is exempt from the requirement to file an annual Form R if--

(1) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any one of its owned or operated facilities used in the performance of this contract is no longer exempt-

(1) The Contractor shall notify the Contracting Officer ;

and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall -

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

54. RESERVED

55. DFARS 252.223-7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (APR 1993)

(a) Definitions. As used in this clause--

(1) "Storage" means a non-transitory, semi-permanent or permanent holding, placement, or leaving of material. It does not include a temporary accumulation of a limited quantity of a material used in or a waste generated or resulting from authorized activities, such as servicing, maintenance, or repair of Department of Defense (DoD) items, equipment, or facilities.

(2) "Toxic or hazardous materials" means:

(i) Materials referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601(14)) and materials designated under section 102 of CERCLA (42 U.S.C. 9602) (40 CFR Part 302);

(ii) Materials that are of an explosive, flammable, or pyrotechnic nature; or

(iii) Materials otherwise identified by the Secretary of Defense as specified in DoD regulations.

(b) In accordance with 10 U.S.C. 2692, the Contractor is prohibited from storing or disposing of non- DoD-owned toxic or hazardous materials on a DoD installation, except to the extent authorized by a statutory exception to 10 U.S.C. 2692 or as authorized by the Secretary of Defense or his designee.

56. *FAR 52.225-9 BUY AMERICAN ACT—BALANCE OF PAYMENT PROGRAM—CONSTRUCTION MATERIALS (FEB 2000) (For Contracts less than \$6.806 million)

(a) Definitions. As used in this clause—

“Component” means any article, material, or supply incorporated directly into construction materials.

“Construction material” means an article, material, or supply brought to the construction site by the

Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

“Cost of components” means—

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

“Domestic construction material” means—

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

“Foreign construction material” means a construction material other than a domestic construction material.

“United States” means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) *Domestic preference.* (1) This clause implements the Buy American Act (41 U.S.C. 10a - 10d) and the Balance of Payments Program by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows:

[Contracting Officer to list applicable excepted materials or indicate “none”]

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that—

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent. For determination of unreasonable cost under the Balance of Payments Program, the Contracting Officer will use a factor of 50 percent;

(ii) The application of the restriction of the Buy American Act or Balance of Payments Program to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) *Request for determination of inapplicability of the Buy American Act or Balance of Payments Program.*

(1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including—

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act or Balance of Payments Program applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act or Balance of Payments Program applies, use of foreign construction material is non-compliant with the Buy American Act or Balance of Payments Program.

(d) *Data.* To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

| FOREIGN AND DOMESTIC CONSTRUCTION MATERIALS PRICE COMPARISON | | | |
|--|----------------------------------|-----------------|-----------------------------------|
| <u>Construction Material</u> <u>Description</u> | <u>Unit of</u> <u>Measure</u> | <u>Quantity</u> | <u>Price</u> <u>(Dollars)*</u> |
| <i>Item 1:</i> | | | |
| Foreign construction material | _____ | _____ | _____ |
| Domestic construction material | _____ | _____ | _____ |
| <i>Item 2:</i> | | | |
| Foreign construction material | _____ | _____ | _____ |
| Domestic construction material | _____ | _____ | _____ |

57. *FAR 52.225-10 NOTICE OF BUY AMERICAN ACT/BALANCE OF PAYMENTS PROGRAM REQUIREMENT—CONSTRUCTION MATERIALS (FEB 2000) (Applicable with FAR 52.225-9)

(a) *Definitions.* “Construction material,” “domestic construction material,” and “foreign construction material,” as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act—Balance of Payments Program—Construction Materials” (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) *Requests for determinations of inapplicability.* An offeror requesting a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) *Evaluation of offers.* (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act or Balance of Payments Program, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign

construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) *Alternate offers.* (1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested—

- (i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
- (ii) May be accepted if revised during negotiations.

(End of provision)

| FOREIGN AND DOMESTIC CONSTRUCTION MATERIALS PRICE COMPARISON | | | |
|--|----------------------------------|-----------------|-----------------------------------|
| <u>Construction Material</u> <u>Description</u> | <u>Unit of</u> <u>Measure</u> | <u>Quantity</u> | <u>Price</u> <u>(Dollars)*</u> |
| <i>Item 1:</i> | | | |
| Foreign construction material | _____ | _____ | _____ |
| Domestic construction material | _____ | _____ | _____ |
| <i>Item 2:</i> | | | |
| Foreign construction material | _____ | _____ | _____ |
| Domestic construction material | _____ | _____ | _____ |

[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.]

[Include other applicable supporting information.]

[Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]*

(End of clause)

**58. *FAR 52.225-11 BUY AMERICAN ACT—BALANCE OF PAYMENTS PROGRAM-
CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (FEB 2000) [For Contracts more
than \$6,806,000] ALTERNATE I (JUNE 2000) [For Contracts between \$6.806 and 7.068419 Million]**

(a) *Definitions.* As used in this clause—

“Component” means any article, material, or supply incorporated directly into construction materials.

“Construction material” means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site pre-assembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those

systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

“Cost of components” means—

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

“Designated country” means any of the following countries:

Aruba Kiribati
Austria Korea, Republic of
Bangladesh Lesotho
Belgium Liechtenstein
Benin Luxembourg
Bhutan Malawi
Botswana Maldives
Burkina Faso Mali
Burundi Mozambique
Canada Nepal
Cape Verde Netherlands
Central African Niger
Republic
Chad Norway
Comoros Portugal
Denmark Rwanda
Djibouti Sao Tome and Principe
Equatorial Guinea Sierra Leone
Finland Singapore
France Somalia
Gambia Spain
Germany Sweden
Greece Switzerland
Guinea Tanzania U.R.
Guinea-Bissau Togo
Haiti Tuvalu
Hong Kong Uganda
Ireland United Kingdom
Israel Vanuatu
Italy Western Samoa
Japan Yemen

“Designated country construction material” means a construction material that—

(1) Is wholly the growth, product, or manufacture of a designated country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a designated country into a new and different construction material distinct from the materials from which it was transformed.

“Domestic construction material” means—

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

“Foreign construction material” means a construction material other than a domestic construction material.

“North American Free Trade Agreement country” means Canada or Mexico.

“North American Free Trade Agreement country construction material” means a construction material that—

(1) Is wholly the growth, product, or manufacture of a North American Free Trade Agreement (NAFTA) country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a NAFTA country into a new and different construction material distinct from the materials from which it was transformed.

“United States” means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) *Construction materials.* (1) This clause implements the Buy American Act (41 U.S.C. 10a - 10d) and the Balance of Payments Program by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the Trade Agreements Act and the North American Free Trade Agreement (NAFTA) apply to this acquisition. Therefore, the Buy American Act and Balance of Payments Program restrictions are waived for designated country and NAFTA country construction materials.

(2) The Contractor shall use only domestic, designated country, or NAFTA country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

(3) The requirement in paragraph (b)(2) of this clause does not apply to the construction materials or components listed by the Government as follows:

[Contracting Officer to list applicable excepted materials or indicate “none”]

(4) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(3) of this clause if the Government determines that—

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the restrictions of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent. For determination of unreasonable cost under the Balance of Payments Program, the Contracting Officer will use a factor of 50 percent;

(ii) The application of the restriction of the Buy American Act or Balance of Payments Program to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) *Request for determination of inapplicability of the Buy American Act or Balance of Payments Program.*

(1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(4) of this clause shall include adequate information for Government evaluation of the request, including—

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have

requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act or Balance of Payments Program applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(4)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act or Balance of Payments Program applies, use of foreign construction material is noncompliant with the Buy American Act or Balance of Payments Program.

(d) *Data.* To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

| FOREIGN AND DOMESTIC CONSTRUCTION MATERIALS PRICE COMPARISON | | | |
|--|--------------------|----------|---------------------|
| Construction Material Description | Unit of Measure | Quantity | Price (Dollars)* |
| <i>Item 1:</i> | | | |
| Foreign construction material | _____ | _____ | _____ |
| Domestic construction material | _____ | _____ | _____ |
| <i>Item 2:</i> | | | |
| Foreign construction material | _____ | _____ | _____ |
| Domestic construction material | _____ | _____ | _____ |

[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.]

[Include other applicable supporting information.]

[Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]*

(End of clause)

Alternate I (June 2000). As prescribed in 25.1102(c)(3), delete the definitions of “North American Free Trade Agreement country” and “North American Free Trade Agreement country construction material” from the definitions in paragraph (a) of the basic clause and substitute the following paragraphs (b)(1) and (b)(2) for paragraphs (b)(1) and (b)(2) of the basic clause:

(b) *Construction materials.* (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) and the Balance of Payments Program by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the Trade Agreements Act applies to this acquisition. Therefore, the Buy American Act and Balance of Payments Program restrictions are waived for designated country construction materials.

(2) The Contractor shall use only domestic or designated country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

59. *FAR 52.225-12 NOTICE OF BUY AMERICAN ACT/BALANCE OF PAYMENTS PROGRAM REQUIREMENT—CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (FEB 2000) [Applicable with FAR 52.225-11]] Alternate II (June 2000) [For Contracts Between 6.806 and 7.068419 Million]

(a) *Definitions.* “Construction material,” “designated country construction material,” “domestic construction material,” “foreign construction material,” and “NAFTA country construction material,” as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act—Balance of Payments Program—Construction Materials under Trade Agreements” (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) *Requests for determination of inapplicability.* An offeror requesting a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) *Evaluation of offers.* (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act or Balance of Payments Program, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) *Alternate offers.* (1) When an offer includes foreign construction material, other than designated country or NAFTA country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic, designated country, or NAFTA country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic, designated country, or NAFTA country construction material, and the offeror shall be required to furnish such domestic, designated country, or NAFTA country construction material. An offer based on use of the foreign construction material for which an exception was requested—

- (i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
- (ii) May be accepted if revised during negotiations.

(End of provision)

Alternate II (June 2000) [For Contracts between 6.806 and 7.068419 Million]

As prescribed in 25.1102(d)(3), substitute the following paragraphs (a) and (d) for paragraphs (a) and (d) of the basic provision:

(a) *Definitions.* “Construction material,” “designated country construction material,” “domestic construction material,” and “foreign construction material,” as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act—Balance of Payments Program—Construction Materials under Trade Agreements” (Federal Acquisition Regulation (FAR) clause 52.225-11).

(d) *Alternate offers.* (1) When an offer includes foreign construction material, other than designated country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic or designated country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic or designated country construction material, and the offeror shall be required to furnish such domestic or designated country construction material. An offer based on use of the foreign construction material for which an exception was requested—

- (i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
- (ii) May be accepted if revised during negotiations.

60. *FAR 52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JULY 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.
(End of clause)

61. *FAR 52.226-1 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (JUNE 2000)

(a) Definitions. As used in this clause:

“Indian” means any person who is a member of any Indian tribe, band, group, pueblo, or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any “Native” as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

“Indian organization” means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C., chapter 17.

“Indian-owned economic enterprise” means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitutes not less than 51 percent of the enterprise.

“Indian tribe” means any Indian tribe, band, group, pueblo, or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1452(c).

“Interested party” means a prime contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contractor shall use its best efforts to give Indian organizations and Indian-owned economic enterprises (25 U.S.C. 1544) the maximum practicable opportunity to participate in the subcontracts it awards to the fullest extent consistent with efficient performance of its contract.

(1) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless an interested party challenges its status or the Contracting Officer has independent reason to question that status. In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the—

U.S. Department of the Interior
Bureau of Indian Affairs (BIA)
Attn: Chief, Division of Contracting and
Grants Administration
1849 C Street, NW,
MS-2626-MIB
Washington, DC 20240-4000.

The BIA will determine the eligibility and notify the Contracting Officer. No incentive payment will be made within 50 working days of subcontract award or while a challenge is pending. If a subcontractor is determined to be an ineligible participant, no incentive payment will be made under the Indian Incentive Program.

(2) The Contractor may request an adjustment under the Indian Incentive Program to the following:

- (i) The estimated cost of a cost-type contract.
- (ii) The target cost of a cost-plus-incentive-fee prime contract.
- (iii) The target cost and ceiling price of a fixed-price incentive prime contract.
- (iv) The price of a firm-fixed-price prime contract.

(3) The amount of the adjustment to the prime contract is 5 percent of the estimated cost, target cost, or firm-fixed-price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(4) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(c) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor. The Contracting Officer will seek funding in accordance with agency procedures.

(End of Clause)

62. *FAR 52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent

(1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or

(2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with

(i) specifications or written provisions forming a part of this contract or

(ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold) however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.

63. *FAR 52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copy-right infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at FAR 2.101.

64. *FAR 52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

65. DFARS 252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail

(i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

66. FAR 52.228-1 BID GUARANTEE (SEP 1996) [NOTE: Not required for projects less than \$100,000]

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of bids.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids; and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.

(c) The amount of the bid guarantee shall be twenty (20%) of the bid price or Three Million Dollars (\$3,000,000), whichever is less.

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid and the bid guarantee is available to offset the difference.

67. *FAR 52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government;

(b) Any surety fails to furnish reports on its financial condition as required by the Government ;

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or

(d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting Officer has the right to immediately draw on the ILC.

68. *FAR 52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997) [For Contracts Exceeding \$100,000]

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(b) Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective

(1) for such period as the laws of the State in which this contract is to be performed prescribe, or

(2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

69. *FAR 52.228-11 PLEDGES OF ASSETS (FEB 1992)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--

(1) Pledge of assets; and

(2) Standard Form 28, Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of--

- (1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;
- (2) A recorded lien on real estate. The offeror will be required to provide--
 - (i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);
 - (ii) Evidence of the amount due under any encumbrance shown in the evidence of title;
 - (iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

70. *FAR 52.228-12 PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS (OCT 1995)

In accordance with Section 806(a)(3) of Public Law 102-190, as amended by Sections 2091 and 8105 of Pub. L. 103-355, upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the Contractor shall promptly provide a copy of such payment bond to the requestor.

71. FAR 52.228-13 ALTERNATIVE PAYMENT PROTECTIONS (JULY 2000) [Applicable only for projects or delivery orders less than \$100,000]

- (a) The Contractor shall submit one of the following payment protections:
 - (1) A payment bond.
 - (2) An irrevocable letter of credit from a federally insured financial institution.
- (b) The amount of the payment protection shall be 100 percent of the contract price.
- (c) The submission of the payment protection is required within 10 days of contract award.
- (d) The payment protection shall provide protection for the full contract performance period plus a one-year period.
- (e) Except for escrow agreements and payment bonds, which provide their own protection procedures, the Contracting Officer is authorized to access funds under the payment protection when it has been alleged in writing by a supplier of labor or material that a nonpayment has occurred, and to withhold funds pending resolution by administrative or judicial proceedings or mutual agreement of the parties.
- (f) When a tripartite escrow agreement is used, the Contractor shall utilize only suppliers of labor and material that signed the escrow agreement.

72. FAR 52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and --

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC to cover the entire period of performance or may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal of least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institution rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of at least \$25 million in the past year, ILCs over \$5 million must be confirmed by another acceptable financial institution that had letter of credit business of at least \$25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date-----

Irrevocable Letter of Credit No.-----

Account party's name-----

Account party's address-----

For Solicitation No.-----

(For reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States \$_____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or transferee's sight draft(s) drawn on issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this

Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

[Confirming Financial Institution's Letterhead or Name and Address] ---

(Date) _____

Our Letter of Credit

Advice Number-----

Beneficiary:-----

[U.S. Government agency]

Issuing Financial Institution :-----

Issuing Financial Institution's LC No. :-----

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. \$_____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:
SIGHT DRAFT

[City, State]

(Date) _____

[Name and address of financial institution]

Pay to the order of-----

[Beneficiary Agency] _____

the sum of United States \$ _____

This draft is drawn under-----

Irrevocable Letter of Credit No.-----

[Beneficiary Agency]

By: _____

73. FAR 52.228-15 PERFORMANCE AND PAYMENT BONDS (JULY 2000).

[This provision is Not Required for projects less than \$100,000. See Clauses "Alternate Payment Protections" and "Inapplicable Provisions and Clauses".]

(a) *Definitions.* As used in this clause—

“Original contract price” means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) *Amount of required bonds.* Unless the resulting contract price is \$100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) *Performance bonds (Standard Form 25).* The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) *Payment Bonds (Standard Form 25-A).* The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) *Additional bond protection.* (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) *Furnishing executed bonds.* The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) *Surety or other security for bonds.* The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the:

U.S. Department of Treasury
Financial Management Service
Surety Bond Branch
401 14th Street, NW, 2nd Floor, West Wing
Washington, DC 20227.

(e) *Notice of subcontractor waiver of protection (40 U.S.C. 270b(c)).* Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.
(End of clause)

74. FAR 52.229-3 FEDERAL, STATE, AND LOCAL TAXES (JAN 1991) [For Contracts Exceeding \$100,000]

(a) "Contract date," as used in this clause, means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties," as used in this clause, means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," as used in this clause, means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax," as used in this clause, means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

75. *FAR 52.229-5 TAXES--CONTRACTS PERFORMED IN U.S. POSSESSIONS OR PUERTO RICO (APR 1984)

The term "local taxes," as used in the Federal, State, and local taxes clause of this contract, includes taxes imposed by a possession of the United States or by Puerto Rico.

76. DFARS 252.231-7000

SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR) allowability shall also be determined in accordance with part 231 of the DoD FAR Supplement, in effect on the date of this contract.

77. *FAR 52.232-5
1997)

PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (MAY

(a) Payment of Price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress Payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if --

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor Certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.) I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Refund of Unearned Amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

- (1) Notify the Contracting Officer of such performance deficiency; and
- (2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--
 - (i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or
 - (ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, Liability, and Reservation of Rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

- (1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or
- (2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for Bond Premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final Payment. The Government shall pay the amount due the Contractor under this contract after--

- (1) Completion and acceptance of all work;
- (2) Presentation of a properly executed voucher; and
- (3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation Because of Unfinalized Work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on unfinalized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest Computation on Unearned Amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

- (1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and
- (2) Deducted from the next available payment to the Contractor.

78. RESERVED.

79. *FAR 52.232-17 INTEREST (JUN 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid.

(b) Amounts shall be due at the earliest of the following dates:

(1) The date fixed under this contract.

(2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.

(3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.

(4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

80. *FAR 52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

81. *FAR 52.232-27 PROMPT PAY FOR CONSTRUCTION CONTRACTS (MAY 2001)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause. Payment shall be considered as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101 and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see subparagraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--

(1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project:

(A) The due date for making such payments shall be 14 days after receipt of the payment request by the designated billing office. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date shall be the 14th day after the date of the Contractor's payment request, provided a proper payment request is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, shall be as specified in the contract or, if not specified, 30 days after approval for release to the Contractor by the Contracting Officer.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract):

(A) The due date for making such payments shall be either the 30th day after receipt by the designated billing office of a proper invoice from the Contractor, or the 30th day after Government acceptance of the work or services completed by the Contractor, whichever is later. If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date shall be the 30th day after the date of the Contractor's invoice, provided a proper invoice is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) On a final invoice where the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance shall be deemed to have occurred on the effective date of the contract settlement.

(2) Contractor's Invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(ix) of this clause. If the invoice does not comply with these requirements, it shall be returned within 7 days after the date the designated billing office received the invoice, with a statement of the reasons why it is not a proper invoice. Untimely notification will be taken into account in computing any interest penalty owed the Contractor in the manner described in subparagraph (a)(4) of this clause.

(i) Name and address of the Contractor.

(ii) Invoice Date. (The Contractor is encouraged to date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., prompt payment discount terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to be notified in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232 -5, Payments Under Fixed-Price Construction Contracts.

(ix) Any other information or documentation required by the contract.

(x) While not required, the Contractor is strongly encouraged to assign an identification number to each invoice.

(3) Interest Penalty. An interest penalty shall be paid automatically by the designated payment office, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday when Federal Government offices are closed and Government business is not

expected to be conducted, payment may be made on the following business day without incurring a late payment interest penalty.

(i) A proper invoice was received by the designated billing office.

(ii) A receiving report or other Government documentation authorizing payment was processed and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing Penalty Amount. The interest penalty shall be at the rate established by the Secretary of the Treasury under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) that is in effect on the day after the due date, except where the interest penalty is prescribed by other governmental authority (e.g., tariffs). This rate is referred to as the "Renegotiation Board Interest Rate," and it is published in the Federal Register semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice principal payment amount approved by the Government until the payment date of such approved principal amount; and will be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice principal payment amount and will be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the Contractor of a defective invoice within the periods prescribed in subparagraph (a)(2) of this clause, the due date on the corrected invoice will be adjusted by subtracting from such date the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval shall be deemed to have occurred constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. In the event that actual acceptance or approval occurs within the constructive acceptance or approval period, the determination of an interest penalty shall be based on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 7 days.

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(C) For incorrect electronic funds transfer (EFT) information, in accordance with the EFT clause of this contract.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than \$1 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(5) Prompt Payment Discounts. An interest penalty also shall be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(6) Additional Interest Penalty.

(i) A penalty amount, calculated in accordance with subdivision (a)(6)(iii) of this clause, shall be paid in addition to the interest penalty amount if the Contractor --

(A) Is owed an interest penalty of \$1 or more;
 (B) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(C) Makes a written demand to the designated payment office for additional penalty payment, in accordance with subdivision (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) Contractors shall support written demands for additional penalty payments with the following data. No additional data shall be required. Contractors shall --

- (1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;
- (2) Attach a copy of the invoice on which the unpaid late payment interest was due; and
- (3) State that payment of the principal has been received, including the date of receipt.

(B) Demands must be postmarked on or before the 40th day after payment was made, except that--

- (1) If the postmark is illegible or nonexistent, the demand must have been received and annotated with the date of receipt by the designated payment office on or before the 40th day after payment was made; or
- (2) If the postmark is illegible or nonexistent and the designated payment office fails to make the required annotation, the demand's validity will be determined by the date the Contractor has placed on the demand; provided such date is no later than the 40th day after payment was made.

(iii)(A) The additional penalty shall be equal to 100 percent of any original late payment interest penalty except--

- (1) For additional penalties due on or before January 22, 1992, such penalties shall not exceed \$2,500;
- (2) After January 22, 1992, the additional penalty shall not exceed \$5,000 ;
- (3) The additional penalty shall never be less than \$25; and
- (4) No additional penalty is owed if the amount of the underlying interest penalty is less than \$1.

(B) If the interest penalty ceases to accrue in accordance with the limits stated in subdivision (a)(4)(iii) of this clause, the amount of the additional penalty shall be calculated on the amount of interest penalty that would have accrued in the absence of these limits, subject to the overall limits on the additional penalty specified in subdivision (a)(6)(iii)(A) of this clause.

(C) For determining the maximum and minimum additional penalties, the test shall be the interest penalty due on each separate payment made for each separate contract. The maximum and minimum additional penalty shall not be based upon individual invoices unless the invoices are paid separately. Where payments are consolidated for disbursing purposes, the maximum and minimum additional penalty determination shall be made separately for each contract therein.

(D) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract Financing Payments --

- (1) Due dates for recurring financing payments. If this contract provides for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the (insert day as prescribed by Agency head; if not prescribed, insert 30th day) day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified.
- (2) Due dates for other contract financing. For advance payments, loans, or other arrangements that do not involve recurring submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.
- (3) Interest Penalty Not Applicable. Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) Subcontract Clause Requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt Payment for Subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for Subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause --

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor Clause Flowdown. A clause requiring each subcontractor to include a payment clause and an interest penalty clause conforming to the standards set forth in subparagraphs (c)(1) and (c)(2) of this clause in each of its subcontracts, and to require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract Clause Interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage Permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding Permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding Requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) A copy of any notice issued by a Contractor pursuant to subdivision (d)(3)(i) of this clause has been furnished to the Contracting Officer.

(e) Subcontractor Withholding Procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall --

(1) Subcontractor Notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer Notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to subparagraph (e)(1) of this clause;

(3) Subcontractor Progress Payment Reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under subparagraph (e)(1) of this clause;

(4) Subsequent Subcontractor Payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph (e)(5)(i) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments

under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

- (i) Reduction of the amount of any subsequent certified application for payment; or
- (ii) Payment to the subcontractor of any withheld amounts of a progress payment,

specifying--

(A) The amounts withheld under subparagraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until --

- (i) The day the identified subcontractor performance deficiency is corrected; or
- (ii) The date that any subsequent payment is reduced under subdivision (e)(5)(i) of this

clause.

(f) Third-Party Deficiency Reports--(1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under subparagraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) Subsequent Payment or Interest Charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall --

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first -tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first -tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written Notice of Subcontractor Withholding. A written notice of any withholding shall be issued to a subcontractor (with a copy to the Contracting Officer of any such notice issued by the Contractor), specifying--

- (1) The amount to be withheld;
- (2) The specific causes for the withholding under the terms of the subcontract; and
- (3) The remedial actions to be taken by the subcontractor in order to receive payment of the

amounts withheld.

(h) Subcontractor Payment Entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-Subcontractor Disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the United States is a party. The United States may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of Prime-Subcontractor Rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the

Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) *Non-Recourse for Prime Contractor Interest Penalty.* The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the United States for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

82. *FAR 52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER –CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) *Method of payment.* (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term “EFT” refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either—

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) *Contractor's EFT information.* The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) *Mechanisms for EFT payment.* The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) *Suspension of payment.* If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) *Contractor EFT arrangements.* If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) *Liability for uncompleted or erroneous transfers.* (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for—

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and—

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) *EFT and prompt payment.* A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) *EFT and assignment of claims.* If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) *Liability for change of EFT information by financial agent.* The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) *Payment information.* The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.
(End of Clause)

83. DFARS 252.232-7004 DOD PROGRESS PAYMENT RATES (OCT 2001)

(a) If the contractor is a small business concern, the Progress Payments clause of this contract is modified to change each mention of the progress payment rate and liquidation rate (excepting paragraph (k), *Limitations on Unfinalized Contract Actions*) to 90 percent.

(b) If the contractor is a small disadvantaged business concern, the Progress Payments clause of this contract is modified to change each mention of the progress payment rate and liquidation rate (excepting paragraph (k), *Limitations on Unfinalized Contract Actions*) to 95 percent.
(End of clause)

84. DFARS 252.232-7005 REIMBURSEMENT OF SUBCONTRACTOR ADVANCE PAYMENTS--DOD PILOT MENTOR-PROTEGE PROGRAM (SEP 2001)

(a) The Government will reimburse the Contractor for any advance payments made by the Contractor, as a mentor firm, to a protege firm, pursuant to an approved mentor-protége agreement, provided-

(1) The Contractor's subcontract with the protege firm includes a provision substantially the same as FAR 52.232-12, Advance Payments;

(2) The Contractor has administered the advance payments in accordance with the policies of FAR Subpart 32.4; and

(3) The Contractor agrees that any financial loss resulting from the failure or inability of the protege firm to repay any unliquidated advance payments is the sole financial responsibility of the Contractor.

(b) For a fixed price type contract, advance payments made to a protege firm shall be paid and administered as if they were 100 percent progress payments. The Contractor shall include as a separate attachment with each Standard Form (SF) 1443, Contractor's Request for Progress Payment, a request for reimbursement of advance payments made to a protege firm. The attachment shall provide a separate calculation of lines 14a through 14e of SF 1443 for each protege, reflecting the status of advance payments made to that protege.

(c) For cost reimbursable contracts, reimbursement of advance payments shall be made via public voucher. The Contractor shall show the amounts of advance payments made to each protege on the public voucher, in the form and detail directed by the cognizant contracting officer or contract auditor.
(End of clause)

85. *FAR 52.233-1 DISPUTES (DEC 1998)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) 'Claim,' as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified as required by subparagraph (d)(2) of this clause. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2) (i) Contractors shall provide the certification specified in paragraph (d)(2)(iii) of this clause when submitting any claim exceeding \$100,000.

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows:

'I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.'

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor -certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the offer.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified if required), or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

86. *FAR 52.233-3 PROTEST AFTER AWARD (AUG 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

87. RESERVED

88. FAR 52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required, provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

89. *FAR 52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

- (1) conditions bearing upon transportation, disposal, handling, and storage of materials;
- (2) the availability of labor, water, electric power, and roads;
- (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;
- (4) the conformation and conditions of the ground; and
- (5) the character of equipment and facilities needed preliminary to and during work

performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

90. *FAR 52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

91. *FAR 52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER –CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) *Method of payment.* (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term “EFT” refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either—

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) *Contractor’s EFT information.* The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) *Mechanisms for EFT payment.* The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) *Suspension of payment.* If the Contractor’s EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) *Contractor EFT arrangements.* If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) *Liability for uncompleted or erroneous transfers.* (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor’s EFT information incorrectly, the Government remains responsible for—

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor’s EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and—

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) *EFT and prompt payment.* A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) *EFT and assignment of claims.* If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this

clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) *Liability for change of EFT information by financial agent.* The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) *Payment information.* The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.
(End of Clause)

92. *FAR 52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

93. FAR 52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

94. *FAR 52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

95. *FAR 52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor

shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

- (b) The Contractor shall protect from damage all existing improvements and utilities
 - (1) at or near the work site, and
 - (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refused to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

96. *FAR 52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

97. *FAR 52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

98. *FAR 52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

99. *FAR 52.236-13 ACCIDENT PREVENTION-ALTERNATE I (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will (1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities; (2) avoid interruptions of Government operations and delays in project completion dates; and (3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall--

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontractors.

(f) Before commencing the work, the Contractor shall--

(1) Submit a written proposed plan for implementing this clause. The plan shall include an analysis of the significant hazards to life, limb, and property inherent in contract work performance and a plan for controlling these hazards; and

(2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

100.*FAR 52.236-14 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

(a) The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(b) The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

101.FAR 52.236-15**SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)**

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

102.*FAR 52.236-17**LAYOUT OF WORK (APR 1984)**

The Contractor shall lay out its work from Government-established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

103.FAR 52.236-21**SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)**

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed," "required," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the "direction," "requirement," "order," "designation," or "prescription," of the Contracting Officer is intended and similarly the words "approved," "acceptable," "satisfactory," or words of like import shall mean "approved by," or "acceptable to," or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated," "as detailed," or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed."

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail

(1) the proposed fabrication and assembly of structural elements, and

(2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

104. *FAR 52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

105. DFARS 252.236-7000 MODIFICATION OF PROPOSALS - PRICE BREAKDOWN (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown--

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for--

(i) Material;

(ii) Labor,

(iii) Equipment;

(iv) Subcontracts; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

106. DFARS 252.236-7008 CONTRACT PRICES - BIDDING SCHEDULES (DEC 1991)

(a) The Government's payment for the items listed in the Bidding Schedule shall constitute full compensation to the Contractor for--

- (1) Furnishing all plant, labor, equipment, appliances, and materials; and
- (2) Performing all operations required to complete the work in conformity with the drawings and specifications.

(b) The Contractor shall include in the prices for the items listed in the Bidding Schedule all costs for work in the specifications, whether or not specifically listed in the Bidding Schedule.

107. *FAR 52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

108. *FAR 52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract.

(c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

109. FAR 52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Government-furnished facilities, equipment, materials, services, or site; or

- (4) Directing acceleration in the performance of the work.
- (b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating
 - (1) the date, circumstances, and source of the order and
 - (2) that the Contractor regards the order as a change order.
- (c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.
- (d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.
- (e) The Contractor must assert its right to an adjustment under this clause within 30 days after
 - (1) receipt of a written change order under paragraph (a) of this clause or
 - (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.
- (f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

110. DFARS 252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR Part 31 and DFARS Part 231, in effect on the date of this contract, apply.

111. DFARS 252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:
I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation; and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

(End of clause)

112. *FAR 52.244-2 SUBCONTRACTS (AUG 1998)

(a) Definitions. As used in this clause--

"Approved purchasing system" means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquisition Regulation (FAR).

"Consent of subcontract" means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

"Subcontract," means any contract, as defined in FAR Subpart 2.1, entered into by a subcontractor to furnish supplies or services for performance of the prime contract or a subcontract. It includes, but is not limited to purchase orders, and changes and modifications to purchase orders.

(b) This clause does not apply to subcontracts for special test equipment when the contract contains the clause at FAR 52.245-18, Special Test Equipment.

(c) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modification or unpriced delivery orders), and only if required in accordance with paragraph (d) or (e) of this clause.

(d) If the Contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that--

(1) Is of the cost-reimbursement, time-and-materials, or labor-hour type; or

(2) Is fixed-price and exceeds--

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the National Aeronautics and Space Administration, the greater of the simplified threshold or 5 percent of the total estimated cost of the contract; or

(ii) For a contract awarded by a civilian agency other than the Coast Guard and the National Aeronautics and Space Administration, either the simplified threshold or 5 percent of the total estimated cost of the contract.

(e) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts:

(f)(1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (c), (d), or (e) of this clause, including the following information:

- (i) A description of the supplies or services to be subcontracted.
- (ii) Identification of the type of subcontract to be used.
- (iii) Identification of the proposed subcontractor.
- (iv) The proposed subcontract price.
- (v) The subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions.
- (vi) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.
- (vii) A negotiation memorandum reflecting--
 - (A) The principal elements of the subcontract price negotiations;
 - (B) The most significant considerations controlling establishment of initial or revised prices;
 - (C) The reason cost or pricing data were or were not required;
 - (D) The extent, if any, to which the Contractor did not rely on the subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;
 - (E) The extent to which it was recognized in the negotiation that the subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and subcontractor; and the effect of any such defective data on the total price negotiated;
 - (F) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and
 - (G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.

(2) The Contractor is not required to notify the Contracting Officer in advance of entering into any subcontract for which consent is not required under paragraph (c), (d), or (e) of this clause.

(g) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination--

- (1) Of the acceptability of any subcontract terms or conditions;
- (2) Of the acceptability of any cost under this contract; or
- (3) To relieve the Contractor of any responsibility for performing this contract.

(h) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement subcontracts shall not exceed the fee limitations in FAR 15.404-4(c)(4)(i).

(i) The Contractor shall give the Contracting Officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement by the Government.

(j) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.

(k) Paragraphs (d) and (f) of this clause do not apply to the following subcontracts, which ere evaluated during negotiations:

(End of clause)

113. FAR 52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (MAY 2001)

(a) *Definitions.* As used in this clause—

“Commercial item” has the meaning contained in the clause at 52.202-1, Definitions.

“Subcontract” includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)(1) The following clauses shall be flowed down to subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (O C T 2000) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$500,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer sub-contracting opportunities.

(ii) 52.222-26, Equal Opportunity (FEB 1999) (E.O. 11246).

(iii) 52.222-35, Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (APR 1998) (38 U.S.C. 4212(a)).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).

(v) 52.247-64, Preference for Privately Owned U.S.-Flagged Commercial Vessels (JUN 2000) (46 U.S.C. Appx 1241) (flowdown not required for subcontracts awarded beginning May 1, 1996).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(End of clause)

114. *FAR 52.245-2 GOVERNMENT PROPERTY (FIXED-PRICE CONTRACTS) (DEC 1989) [For Government Property over \$100,000]

(a) Government-furnished property.

(1) The Government shall deliver to the Contractor, for use in connection with and under the terms of this contract, the Government-furnished property described in the Schedule or specifications together with any related data and information that the Contractor may request and is reasonably required for the intended use of the property (hereinafter referred to as "Government-furnished property").

(2) The delivery or performance dates for this contract are based upon the expectation that Government-furnished property suitable for use (except for property furnished "as is") will be delivered to the Contractor at the times stated in the Schedule or, if not so stated, in sufficient time to enable the Contractor to meet the contract's delivery or performance dates.

(3) If Government-furnished property is received by the Contractor in a condition not suitable for the intended use, the Contractor shall, upon receipt of it, notify the Contracting Officer, detailing the facts, and, as directed by the Contracting Officer and at Government expense, either repair, modify, return, or otherwise dispose of the property. After completing the directed action and upon written request of the Contractor, the Contracting Officer shall make an equitable adjustment as provided in paragraph (h) of this clause.

(4) If Government-furnished property is not delivered to the Contractor by the required time, the Contracting Officer shall, upon the Contractor's timely written request, make a determination of the delay, if any, caused the Contractor and shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(b) Changes in Government-furnished property.

(1) The Contracting Officer may, by written notice,

(i) decrease the Government-furnished property provided or to be provided under this contract, or

(ii) substitute other Government-furnished property for the property to be provided by the Government, or to be acquired by the Contractor for the Government, under this contract. The Contractor

shall promptly take such action as the Contracting Officer may direct regarding the removal, shipment, or disposal of the property covered by such notice.

(2) Upon the Contractor's written request, the Contracting Officer shall make an equitable adjustment to the contract in accordance with paragraph (h) of this clause, if the Government has agreed in the Schedule to make the property available for performing this contract and there is any--

(i) Decrease or substitution in this property pursuant to subparagraph (b)(1) above; or

(ii) Withdrawal of authority to use this property, if provided under any other contract or lease.

(c) Title in Government property.

(1) The Government shall retain title to all Government-furnished property.

(2) All Government-furnished property and all property acquired by the Contractor, title to which vests in the Government under this paragraph (collectively referred to as "Government property"), are subject to the provisions of this clause. However, special tooling accountable to this contract is subject to the provisions of the Special Tooling clause and is not subject to the provisions of this clause. Title to Government property shall not be affected by its incorporation into or attachment to any property not owned by the Government, nor shall government property become a fixture or lose its identity as personal property by being attached to any real property.

(3) Title to each item of facilities and special test equipment acquired by the Contractor for the Government under this contract shall pass to and vest in the Government when its use in performing this contract commences or when the Government has paid for it, whichever is earlier, whether or not title previously vested in the Government.

(4) If this contract contains a provision directing the Contractor to purchase material for which the Government will reimburse the Contractor as a direct item of cost under this contract--

(i) Title to material purchased from a vendor shall pass to and vest in the Government upon the vendor's delivery of such material; and

(ii) Title to all other material shall pass to and vest in the Government upon--

(A) Issuance of the material for use in contract performance;

(B) Commencement of processing of the material or its use in contract performance; or

(C) Reimbursement of the cost of the material by the Government, whichever occurs first.

(d) Use of Government property. The Government property shall be used only for performing this contract, unless otherwise provided in this contract or approved by the Contracting Officer.

(e) Property Administration.

(1) The Contractor shall be responsible and accountable for all Government property provided under this contract and shall comply with Federal Acquisition Regulation (FAR) Subpart 45.5, as in effect on the date of this contract.

(2) The Contractor shall establish and maintain a program for the use, maintenance, repair, protection, and preservation of Government property in accordance with sound industrial practice and the applicable provisions of Subpart 45.5 of the FAR.

(3) If damage occurs to Government property, the risk of which has been assumed by the Government under this contract, the Government shall replace the items or the Contractor shall make such repairs as the Government directs. However, if the Contractor cannot effect such repairs within the time required, the Contractor shall dispose of the property as directed by the Contracting Officer. When any property for which the Government is responsible is replaced or repaired, the Contracting Officer shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(4) The Contractor represents that the contract price does not include any amount for repairs or replacement for which the Government is responsible. Repair or replacement of property for which the Contractor is responsible shall be accomplished by the Contractor at its own expense.

(f) Access. The Government and all its designees shall have access at all reasonable times to the premises in which any Government property is located for the purpose of inspecting the Government property.

(g) Risk of loss. Unless otherwise provided in this contract, the Contractor assumes the risk of, and shall be responsible for, any loss or destruction of, or damage to, Government property upon its delivery to the

Contractor or upon passage of title to the Government under paragraph (c) of this clause. However, the Contractor is not responsible for reasonable wear and tear to Government property or for Government property properly consumed in performing this contract.

(h) Equitable adjustment. When this clause specifies an equitable adjustment, it shall be made to any affected contract provision in accordance with the procedures of the Changes clause. When appropriate, the Contracting Officer may initiate an equitable adjustment in favor of the Government. The right to an equitable adjustment shall be the Contractor's exclusive remedy. The Government shall not be liable to suit for breach of contract for--

- (1) Any delay in delivery of Government-furnished property;
- (2) Delivery of Government-furnished property in a condition not suitable for its intended use;
- (3) A decrease in or substitution of Government-furnished property; or
- (4) Failure to repair or replace Government property for which the Government is responsible.

(i) Final accounting and disposition of Government property. Upon completing this contract, or at such earlier dates as may be fixed by the Contracting Officer, the Contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of Government property (including any resulting scrap) not consumed in performing this contract or delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as the Contracting Officer directs.

(j) Abandonment and restoration of Contractor's premises. Unless otherwise provided herein, the Government--

- (1) May abandon any Government property in place, at which time all obligations of the Government regarding such abandoned property shall cease; and
- (2) Has no obligation to restore or rehabilitate the Contractor's premises under any circumstances (e.g., abandonment, disposition upon completion of need, or upon contract completion). However, if the Government-furnished property (listed in the Schedule or specifications) is withdrawn or is unsuitable for the intended use, or if other Government property is substituted, then the equitable adjustment under paragraph (h) of this clause may properly include restoration or rehabilitation costs.

(k) Communications. All communications under this clause shall be in writing.

(l) Overseas contracts. If this contract is to be performed outside of the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

115. *FAR 52.245-4 GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) (APR 1984)
[For Government Property \$100,000 or Less]

(a) The Government shall delivery to the Contractor, at the time and locations stated in this contract, the Government-furnished property described in the Schedule or specifications. If that property, suitable for its intended use, is not delivered to the Contractor, the Contracting Officer shall equitably adjust affected provisions of this contract in accordance with the Changed clause when--

- (1) The Contractor submits a timely written request for an equitable adjustment; and
- (2) The facts warrant an equitable adjustment.

(b) Title to Government-furnished property shall remain in the Government. The Contractor shall use the Government-furnished property only in connection with this contract. The Contractor shall maintain adequate property control records in accordance with sound industrial practice and will make such records available for Government inspection at all reasonable times, unless the clause at Federal Acquisition Regulation 52.245-1, Property Records, is included in this contract.

(c) Upon delivery of Government-furnished property to the Contractor, the Contractor assumes the risk and responsibility for its loss or damage, except--

- (1) For reasonable wear and tear;
- (2) To the extent property is consumed in performing this contract; or
- (3) As otherwise provided for by the provisions of this contract.

(d) Upon completing this contract, the Contractor shall follow the instructions of the Contracting Officer regarding the disposition of all Government-furnished property not consumed in performing this contract or previously delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property, as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as directed by the Contracting Officer.

(e) If this contract is to be performed outside the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

116. *FAR 52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

(2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

(3) Constitute or imply acceptance; or

(4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) below.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may

(1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or

(2) Terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer

determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

117. *FAR 52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government -owned or controlled real or personal property, when that damage is the result of --

- (1) The Contractor's failure to conform to contract requirements; or
- (2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall --

- (1) Obtain all warranties that would be given in normal commercial practice ;
- (2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and
- (3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government -furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

118. DFARS 252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) Definitions.

As used in this clause--

(1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.

(2) "Department of Defense" (DOD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

(3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.

(4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime Contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b) (1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessel if--

(i) This Contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that--

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum--

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number, and
(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information--

- (1) Prime contract number;
- (2) Name of vessel;
- (3) Vessel flag of registry;
- (4) Date of loading;
- (5) Port of loading;
- (6) Port of final discharge;
- (7) Description of commodity;
- (8) Gross weight in pounds and cubic feet if available;
- (9) Total ocean freight in U.S. dollars; and
- (10) Name of the steamship company.

(f) The Contractor agrees to provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

- (1) No ocean transportation was used in the performance of this contract;
- (2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;
- (3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or
- (4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format;

| ITEM DESCRIPTION | CONTRACT LINE ITEMS | QUANTITY |
|---------------------|------------------------|----------|
|---------------------|------------------------|----------|

TOTAL

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) The Contractor shall include this clause, including this paragraph (h) in all subcontracts under this contract that--

- (1) Exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation; and
- (2) Are for a type of supplies described in paragraph (b) (2) of this clause.

119. DFARS 252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor--

- (1) Shall notify the Contracting Officer of that fact; and
- (2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) (1) The Contractor shall use U.S. -flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessel if--

(i) This Contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

120. FAR 52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000) (ALERNATE I (APR 1984))

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) of this clause.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) of this clause).

"Value engineering change proposal (VECP)" means a proposal that--

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

(i) In deliverable end item quantities only; or

(ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in paragraphs (c) (1) through (7) of this clause. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

- (3) A separate, detailed cost estimate for
 - (i) the affected portions of the existing contract requirement and
 - (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) of this clause.
- (4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.
- (5) A prediction of any effects the proposed change would have on collateral costs to the agency.
- (6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.
- (7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.
- (d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.
- (e) Government action.
 - (1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it will not be liable for any delay in acting upon a VECP.
 - (2) If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.
 - (3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applied a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.
- (f) Sharing.
 - (1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by
 - (i) 45 percent for fixed-price contracts or
 - (ii) 75 percent for cost-reimbursement contracts.
 - (2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--
 - (i) Accept the VECP;
 - (ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and
 - (iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.
- (g) Deleted.
- (h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) of this clause, the Contractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.
- (i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering--Construction clause of contract - _____, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of Clause)

121. *FAR 52.249-1 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SHORT FORM) (APR 1984) [For Contracts \$100,000 or Less]

The Contracting Officer, by written notice, may terminate this contract, in whole or in part, when it is in the Government's interest. If this contract is terminated, the rights, duties, and obligations of the parties, including compensation to the Contractor, shall be in accordance with Part 49 of the Federal Acquisition Regulation in effect on the date of this contract.

122. *FAR 52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) ALTERNATE I (SEP 1996) [For Contracts Over \$100,000]

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

- (1) Stop work as specified in the notice.
- (2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.
- (3) Terminate all subcontracts to the extent they relate to the work terminated.
- (4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.
- (5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.
- (6) As directed by the Contracting Officer, transfer title and deliver to the Government
 - (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and
 - (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.
- (7) Complete performance of the work not terminated.
- (8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.
- (9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b) (6) of this clause; provided, however, that the Contractor

(i) is not required to extend credit to any purchaser and
(ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1 year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (f) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be amended, and the Contractor paid the agreed amount. Paragraph (f) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and the Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of the termination, the total (without duplication of any items) of--

(i) The cost of this work;
(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and
(iii) A sum, as profit on subdivision (g)(1)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--
(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;
(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and
(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of

this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m) (1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

123. *FAR 52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if-

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(i) acts of God or of the public enemy,

Government,

- (ii) acts of the Government in either its sovereign or contractual capacity,
- (iii) acts of another Contractor in the performance of a contract with the
- (iv) fires,
- (v) floods,
- (vi) epidemics,
- (vii) quarantine restrictions,
- (viii) strikes,
- (ix) freight embargoes,
- (x) unusually severe weather, or
- (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

(d) The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

124. ENVIRONMENTAL LITIGATION (1974 NOV OCE)

(a) If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a Subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the "Suspension of Work" clause of this contract. The period of such suspension, delay, or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

(b) The term "environmental litigation," as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

125. EFARS 52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS

Actual costs will be used to determine equipment cost for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a termination settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

(1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.

(2) If equipment costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.

(3) Recorded job costs adjusted for unallowable and unallocable expenses will be used to determine equipment operating expenses.

(4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

(5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.

126. INAPPLICABLE PROVISIONS AND CLAUSES (Local Provision). [Applicable only for projects or delivery orders less than \$100,000]

This provision applies only to delivery orders and projects less than \$100,000.

Pursuant to Pub. L. 103-355, the following provisions and clauses, as noted below, are inapplicable to this contract:

- (a) FAR 28.102-3, Miller Act requirements;
- (b) Not Used;
- (c) FAR 52.203-5, Covenant Against Contingent Fees;
- (d) FAR 52.203-6, Restrictions on Subcontractor Sales to the Government;
- (e) FAR 52.203-7, Anti-Kickback Procedures;
- (f) FAR 52.222-4, Contract Work Hours and Safety Standards Act-Overtime Compensation; and
- (g) FAR 52.223-6, Drug-Free Workplace, except for individuals.

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SECTION 00800

SPECIAL CONTRACT REQUIREMENTS
5/00; Rev 8/00

PART 1 GENERAL

Attachments:

General Wage Decision No. IA010001, Heavy and Highway Schedule

1.1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall commence work under this contract within ten (10) calendar days after the date of receipt by him of Notice to Proceed, prosecute said work diligently, and complete the entire work except seeding ready for use not later than 300 calendar days after receipt of Notice to Proceed. The time stated for completion shall include final cleanup of the premises. (FAR 52.211-10)

1.1.1 Start Work

Evidence that the Contractor has started procurement of materials, preparation and submission of shop drawings, preparation of subcontracts, and other preparatory work will satisfy the requirement that work commence within ten (10) calendar days after receipt of Notice to Proceed. Therefore, work need not be commenced at the construction site within ten (10) calendar days.

1.2 LIQUIDATED DAMAGES-CONSTRUCTION (SEPT 2000)

(a) If the Contractor fails to complete the work within the timespecified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of \$395.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause. (FAR 52.211-12)

1.3 EXCEPTION TO COMPLETION TIME AND LIQUIDATED DAMAGES

In case the Contracting Officer determines that seeding, and/or the specified maintenance thereof is not feasible during the construction period, such work will be excepted from the completion time and liquidated damages. This work shall be accomplished during the first seeding, period and the specified maintenance period following the completion date.

1.4 CONTRACT DRAWINGS AND SPECIFICATIONS

1.4.1 SETS FURNISHED

The contractor shall be responsible for making copies of specifications including amendments. The bid drawings as amended shall be utilized in the performance of the work until contract drawings (i.e., bid drawings that have been posted with all amendment changes) are mailed to the Contractor. See Section 01040 As-Built Drawings for drawings being furnished to the Contractor. The work shall conform to the contract drawings, set out in the drawing index, all of which form a part of these specifications. The work shall also conform to the standard details bound or referenced herein.

1.4.2 NOTIFICATION OF DISCREPANCIES

The Contractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Contracting Officer of any discrepancies. Dimensions marked on drawings shall be followed in lieu of scale measurements. Enlarged plans and details shall govern where the same work is shown at smaller scales. All scales shown are based on a standard drawing size of metric drawing size of 841mm x 594mm. If any other size drawings are furnished or plotted the contractor shall adjust the scales accordingly. The contractor shall also advise his sub-contractors of the above. The Contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby.

1.4.3 OMISSIONS

Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

1.5 SUBMITTALS

See Section 01330 SUBMITTAL PROCEDURES.

1.6 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractors' information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

a. The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys and borings. The data shown graphically and by symbol for each respective boring represents the actual geologic features observed and logged at the location given on the drawings. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local minor variations characteristic of the subsurface materials of this region could occur.

b. Weather conditions shall have been investigated by the Contractor to satisfy himself as to the hazards likely to arise therefrom. Complete weather records and reports may be obtained from the local U.S. Weather Bureau.

c. Transportation facilities shall have been investigated by the Contractor to satisfy himself as to the existence of access highways

and railroad facilities. (FAR 52.236-4)

1.7 CONCURRENT CONSTRUCTION

Construction work closely related to and/or located at the site of the work under a concurrent contract will be in progress simultaneously with work under this contract. The locations of this concurrent work is shown on the drawings or described in these specifications. The Contractor shall cooperate with others as necessary in the interest of timely completion of all work. In the event of interference, the Contracting Officer shall be notified immediately for resolution and his decision shall be final.

1.8 PAYMENT

1.8.1 PROMPT PAYMENT ACT

Pay requests authorized in CONTRACT CLAUSES clause: "Payments Under Fixed-Price Construction Contracts", will be paid pursuant to the clause, "Prompt Payment for Construction Contracts". Pay requests will be submitted on ENG Form 93 and 93a, "Payment Estimate-Contract Performance" and "Continuation". All information and substantiation required by the identified contract clauses will be submitted with the ENG Form 93, and the required certification will be included on the last page of the ENG Form 93a, signed by an authorized contractor official and dated when signed. The designated billing office is the Office of the Area Engineer.

1.8.2 PAYMENTS FOR MODIFICATIONS

Payments may be made for cost bearing change orders within the scope of the contract only to the extent funds are authorized in the order on a two-part modification. Contractor pricing proposed must be submitted at the earliest possible time after the change order is issued, or at a specific time as directed by the Contracting Officer. At the discretion of the Contracting Officer, any and all payments may be withheld on the modification until the Contractor has submitted a qualifying price proposal, in as much detail as required by the Contracting Officer, and the final price has been agreed.

1.8.3 PAYMENT FOR MATERIALS DELIVERED OFFSITE (MAR 1995)

a. Pursuant to FAR clause 52.232-5, Payments Under Fixed Priced Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the work site will be limited to: (1) materials required by the technical provisions; or (2) materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

b. Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of material and labor incorporated into the item. Payment for materials delivered off-site includes petroleum products. (List additional items for which payments will be made for off-site delivery.) (EFAR 52.232-5000)

1.9 AVAILABILITY OF UTILITY SERVICES

All reasonably required amounts of domestic water and electricity will be made available to the Contractor by the Government from existing system outlets and supplies. The Contractor shall, at his own expense, make all temporary connections and install distribution lines. The Contractor shall furnish to the Contracting Officer a complete system layout drawing showing type of materials to be used and method of installation for all temporary electrical systems. The Contractor shall make arrangements with the Using Service, through the Contracting Officer, as to the method of determining the amount of water and electricity to be used by him and the method of payment therefor. All temporary lines shall be maintained by the Contractor in a workmanlike manner satisfactory to the Contracting Officer and shall be removed by the Contractor in like manner prior to final acceptance of the construction. Normal quantities of electricity and water used to make final tests of completely installed systems will be furnished by the Government.

1.10 UTILITY SERVICE INTERRUPTIONS

The Contractor shall submit written notification not less than 15 calendar days in advance of each interruption of each utility and communication service to or within existing buildings and facilities being used by others. No single outage will exceed 4 hours unless approved in writing. The time and duration of all outages will be coordinated with the Using Agency by the Contracting Officer.

1.11 DIGGING PERMITS AND ROAD CLOSINGS

The Contractor shall allow 14 calendar days from date of written application to receive permission to dig and to close roads. Roads shall only be closed one lane at a time and vehicular traffic shall be allowed to pass through the construction area. Work on or near roadways shall be flagged in accordance with the safety requirements in Safety and Health Requirements Manual EM 385-1-1, which forms a part of these specifications. Work located along the alert force route shall not cause blockage and the Contractor shall maintain unobstructed access for alert force traffic at all times.

1.12 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

a. This clause specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the contract clause entitled "Default: (Fixed-Price Construction)." In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather

dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

| | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| (16) | (11) | (06) | (07) | (08) | (06) | (07) | (06) | (05) | (04) | (03) | (12) |

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b. above, the contracting officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)". (ER 415-1-15)

1.13 IOWA SALES AND USE TAX

a. In the event goods, wares or merchandise on which the Contractor has paid Iowa sales or use tax become an integral part of the project, the Contractor shall obtain appropriate forms from the Iowa State Tax Commission for recording the amount of purchases of such goods, wares, or merchandise, and shall complete, execute, and deliver them to the Contracting Officer prior to final settlement of the contract. The Contractor shall provide and report all data and information which may be necessary or required to enable the Contracting Officer to obtain all refunds from the Iowa Tax Commission to which the Federal Government may be entitled.

b. The Contractor shall insert a clause containing the substance of the foregoing paragraph a. in every first tier subcontractor or vendor to include such a clause in any subcontract or purchase order which he places. The Contractor shall obtain completed forms from his subcontractor and suppliers for submission to the Contracting Officer before final settlement of the contract.

1.14 INSURANCE REQUIRED

In accordance with CONTRACT CLAUSES clause: "Insurance Work on a Government Installation," the Contractor shall procure the following minimum insurance:

| Type | Amount |
|---|--|
| Workmen's Compensation and Employer's Liability Insurance | \$100,000 |
| General Liability Insurance | \$500,000 per occurrence |
| Automobile Liability Insurance | |
| Bodily injury | \$200,000 per person and \$500,000 per occurrence |
| Property damage | \$ 20,000 per occurrence |

(Coverages per FAR 28.307-2)

1.15 SECURITY REQUIREMENTS

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer, for cancellation upon release of any employees. When the contract involves work in restricted security areas, only employees who are U.S. citizens will be permitted to enter. Proof of U.S. citizenship is required prior to entry. When required by the Contracting Officer, the Contractor shall obtain and submit fingerprints of all persons employed or to be employed on the project. See Section 01511 IOWA AAP PLANT CONSTRUCTION SECURITY REQUIREMENTS for additional requirements. (Based on FAR 52.204-2)

1.16 CONTRACTOR QUALITY CONTROL (CQC)

See Section 01451A Contractor Quality Control.

1.17 NONDOMESTIC CONSTRUCTION MATERIALS

The List of nondomestic construction materials or their components included in the list set forth in paragraph 25.104 of the Federal Acquisition Regulation does not apply to the requirements of the contract clause entitled "Buy American Act Construction Materials".

1.18 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be a DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation. (FAR 52.211-14)

1.19 DAILY WORK SCHEDULES

In order to closely coordinate work under this contract, the Contractor shall prepare a written agenda/meeting minutes and attend a weekly coordination meeting with the Contracting Officer and Using Service at which time the Contractor shall submit for coordination and approval, his proposed daily work schedule for the next two week period. The Contractor shall provide a copy of modifications (MODs), Serial Letters, Requests for Information (RFIs) and any other information that is needed in the minutes of the meeting. Required temporary utility services, time and duration of interruptions, and protection of adjoining areas shall be included with the Contractor's proposed 2-week work schedule. At this meeting, the Contractor shall also submit his schedule of proposed dates and times of all preparatory inspections to be performed during the next 2 weeks. The items of work listed on the proposed 2-week schedule are to be keyed to the NAS by activity number and description for each activity anticipated to be performed during the next 2-week period. Coordination action by the Contracting Officer relative to these schedules will be accomplished during these weekly meetings. Daily reports shall be completed and given to the Contracting Officer or Representative within 24 hours of work.

1.20 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAR 1995)

- a. This statement shall become operative only for negotiated contracts

where cost or pricing data is requested, and for modifications to sealed bid or negotiated contracts where cost or pricing data is requested. This clause does not apply to terminations. See 52.249-5000, Basis for settlement of proposals and FAR Part 49.

b. Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a Contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the Contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series of equipment from the Contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, "Construction Equipment Ownership and Operating Expense Schedule," Region IV. Copies of each regional schedule may be obtained through the following internet site: <http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep.htm> and a copy is included on CD-ROM issued with this solicitation. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be developed using the formula provided in the schedule. For forward pricing, the Schedule in effect at the time of negotiations shall apply. For retrospective pricing, the Schedule in effect at the time the work was performed shall apply.

c. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

c. When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet. (EFARS 52.231-5000)

1.21 AS-BUILT DRAWINGS

See SECTION 01040 - AS-BUILT DRAWINGS

1.22 CONTRACTOR FURNISHED EQUIPMENT DATA

See Section 01200 Warranty of Construction for Contractor Furnished Equipment Data to be submitted as part of the Warranty Equipment Booklet.

1.23 SPECIAL INSTRUCTIONS FOR PROGRESS CHARTS

To be submitted in accordance with the CONTRACT CLAUSES clause entitled "Schedule for Construction Contracts" shall indicate the required data for each of the principal features of the work. Contract changes or modifications will not include extensions of time unless the updated progress chart shows that the contract completion date is delayed due to the affect of the change on one or more principal features of the work.

1.24 NOT USED

1.25 PERFORMANCE OF WORK BY CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least twenty (20) percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government. (FAR 52.236-1)

1.26 PROFIT

a. Weighted guidelines method of determining profit shall be used on any equitable adjustment change order or modification issued under this contract. The profit factors shall be as follows:

| Factor | Rate | Weight | Value |
|-----------------------------|------|----------|-------|
| Degree of Risk | 20 | See Item | |
| Relative difficulty of work | 15 | b. below | |
| Size of Job | 15 | | |
| Period of performance | 15 | | |
| Contractor's investment | 5 | | |
| Assistance by Government | 5 | | |
| Subcontracting | 25 | | |

100

b. Based on the circumstances of each procurement action, each of the above factors shall be weighted from .03 to .12 as indicated below. The value shall be obtained by multiplying the rate by the weight. The value column when totalled indicates the fair and reasonable profit percentage under the circumstances of the particular procurement.

(1) Degree of Risk. Where the work involves no risk or the degree of risk is very small, the weighting should be .03; as the degree of risk increases, the weighting should be increased up to a maximum of .12. Lump sum items will have, generally, a higher weighted value than the unit price items for which quantities are provided. Other things to consider: the portion of the work to be done by subcontractors, nature of work, where work is to be performed, reasonableness of negotiated costs, amount of labor included in costs, and whether the negotiation is before or after performance of work.

(2) Relative Difficulty of Work. If the work is most difficult and complex, the weighting should be .12 and should be proportionately reduced to .03 on the simplest of jobs. This factor is tied in to some extent with the degree of risk. Some things to consider: the nature of the work, by whom it is to be done, where, and what is the time schedule.

(3) Size of Job. All work not in excess of \$100,000 shall be weighted at .12. Work estimated between \$100,000 and \$5,000,000 shall be proportionately weighted from .12 to .05.

(4) Periods of Performance. Jobs in excess of 24 months are to be weighted at .12. Jobs of lesser duration are to be proportionately weighted to a minimum of .03 for jobs not to exceed 30 days. No weight where additional time not required.

(5) Contractor's Investment. To be weighted from .03 to .12 on the basis of below average, average, and above average. Things to consider: amount of subcontracting, mobilization payment item, Government furnished property, equipment and facilities, and expediting assistance.

(6) Assistance by Government. To be weighted from .12 to .03 on the basis of average to above average. Things to consider: use of Government-owned property, equipment and facilities, and expediting assistance.

(7) Subcontracting. To be weighted inversely proportional to the amount of subcontracting. Where 80 percent or more of the work is to be subcontracted, the weighting is to be .03 and such weighting proportionately increased to .12 where all the work is performed by the Contractor's own forces.

1.27 LABOR CONDITIONS APPLICABLE TO TEMPORARY FACILITIES

It is the position of the Department of Defense that the Davis-Bacon Act, 40 U.S.C. 276a is applicable to temporary facilities such as batch plants, sandpits, rock quarries, and similar operations, located off the immediate site of the construction but set up exclusively to furnish required materials for a construction project on the site of the work. Clause "Payrolls and Basic Records" of the CONTRACT CLAUSES is applicable to such operations.

1.28 DRAWING SCALES

All scales shown are based on a standard drawing size of metric drawing size of 841mm x 594mm. If any other size drawings are furnished or plotted, the contractor shall adjust the scales accordingly. The Contractor shall also advise his sub-contractors of the above.

1.29 WAGE RATE APPLICATION

Applicable to all work.

1.30 (FAR 52.222-23) NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

| Goals for Minority Participation | Goals for Female Participation |
|----------------------------------|--------------------------------|
|----------------------------------|--------------------------------|

for Each Trade

3.4

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the -

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Davenport-Rock Island-Moline, EA-099, which Des Moines county is a part of

1.31 FEDERAL HOLIDAYS

The following Federal legal holidays are observed by this installation:

| | |
|-------------------------------|--------------------------|
| New Year's Day | 1 January |
| Martin Luther King's Birthday | Third Monday in January |
| President's Day | Third Monday in February |
| Memorial Day | Last Monday in May |
| Independence Day | 4 July |

| | |
|------------------|-----------------------------|
| Labor Day | First Monday in September |
| Columbus Day | Second Monday in October |
| Veterans Day | 11 November |
| Thanksgiving Day | Fourth Thursday in November |
| Christmas Day | 25 December |

If a wage determination applies the number of holidays specified on it, it has priority over this clause.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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General Decision Number IA010001

General Decision Number IA010001
Superseded General Decision No. IA000001

State: Iowa

Construction Type:
HEAVY
HIGHWAY

County(ies):
STATEWIDE
STATEWIDE EXCEPT SCOTT COUNTY

HEAVY CONSTRUCTION PROJECTS (Does not include work on or
pertaining to the Mississippi or Missouri Rivers or on Water and
Sewage Treatment Plants), AND HIGHWAY PROJECTS (does not include
building structures in rest areas)

| Modification Number | Publication Date |
|---------------------|------------------|
| 0 | 03/02/2001 |
| 1 | 03/16/2001 |

COUNTY(ies):

STATEWIDE

* SUIA2006A 12/15/2000

| | Rates | Fringes |
|---|-------|---------|
| CARPENTERS AND PILEDRIVERMEN: | | |
| ZONE 1 | 19.15 | 4.55 |
| ZONE 2 | 18.15 | 3.66 |
| ZONE 3 | 17.16 | 4.55 |
| ZONE 4 | 15.80 | 4.05 |
| ZONE 5 | 15.25 | 3.00 |
| CONCRETE FINISHERS: | | |
| ZONE 1 | 16.12 | 3.95 |
| ZONE 2 | 16.12 | 3.95 |
| ZONE 3 | 16.12 | 3.95 |
| ZONE 4 | 15.51 | 2.94 |
| ZONE 5 | 13.20 | 3.10 |
| ELECTRICIANS (STREET AND HIGHWAY LIGHTING AND TRAFFIC SIGNALS): | | |
| ZONES 1, 2, & 3 | 16.25 | 3.00 |
| ZONE 4 | 14.95 | 3.00 |
| ZONE 5 | 12.70 | 3.00 |
| IRONWORKERS (SETTING OF STRUCTURAL STEEL): | | |
| ZONE 1 | 20.70 | 6.00 |
| ZONE 2 AND 3 | 20.70 | 6.00 |
| ZONE 4 | 17.69 | 3.41 |
| LABORERS: | | |
| ZONES 1 AND 2 | | |
| GROUP A | 16.33 | 4.05 |
| GROUP B | 14.63 | 4.05 |
| GROUP C | 10.80 | 4.05 |
| ZONE 3 | | |
| GROUP A | 16.33 | 4.05 |
| GROUP B | 14.63 | 4.05 |
| GROUP C | 10.80 | 4.05 |
| ZONE 4 | | |
| GROUP A | 13.85 | 4.05 |
| GROUP B | 12.53 | 4.05 |
| GROUP C | 10.35 | 3.00 |
| ZONE 5 | | |
| GROUP A | 13.45 | 3.00 |
| GROUP B | 10.15 | 3.00 |
| GROUP C | 9.60 | 3.00 |
| POWER EQUIPMENT OPERATORS: | | |
| ZONE 1 | | |
| GROUP A | 21.00 | 7.90 |
| GROUP B | 19.40 | 7.90 |
| GROUP C | 16.90 | 7.90 |
| GROUP D | 16.90 | 7.90 |
| ZONE 2 | | |
| GROUP A | 20.70 | 7.90 |
| GROUP B | 19.10 | 7.90 |
| GROUP C | 16.60 | 7.90 |
| GROUP D | 16.60 | 7.90 |
| ZONE 3 | | |
| GROUP A | 22.10 | 6.85 |
| GROUP B | 20.30 | 6.85 |

| | | |
|----------------|-------|------|
| GROUP C | 19.30 | 6.85 |
| GROUP D | 19.30 | 6.85 |
| ZONE 4 | | |
| GROUP A | 20.15 | 4.00 |
| GROUP B | 19.01 | 4.00 |
| GROUP C | 16.93 | 3.77 |
| GROUP D | 16.93 | 3.77 |
| ZONE 5 | | |
| GROUP A | 17.22 | 3.00 |
| GROUP B | 16.18 | 3.00 |
| GROUP C | 14.85 | 3.00 |
| GROUP D | 13.85 | 3.00 |
| TRUCK DRIVERS: | | |
| ZONE 1 | 16.05 | 4.90 |
| ZONE 2 | 16.05 | 4.90 |
| ZONE 3 | 15.78 | 4.90 |
| ZONE 4 | 14.96 | 3.04 |
| ZONE 5 | 12.80 | 3.00 |

ZONE DEFINITIONS

- ZONE 1 - The Counties of Polk, Warren and Dallas for all Crafts, and Linn County Carpenters Only.
- ZONE 2 - The Counties of Dubuque for all crafts and Linn County for all Crafts except Carpenters.
- ZONE 3 - The Cities of Burlington, Clinton, Fort Madison Keokuk, and Muscatine (and abutting municipalities of any such cities).
- ZONE 4 - Story, Black Hawk, Cedar, Jasper, Jones, Jackson, Madison and Marion Counties; Clinton County (except the City of Clinton), Johnson County, Muscatine County (except the City of Muscatine), the City of Council Bluffs, Lee County and Des Moines County.
- ZONE 5 - All areas of the state not listed above.

LABORER CLASSIFICATIONS - ALL ZONES

GROUP A - Carpenter tender on bridges and box culverts; crub machine (without a seat); deck hand; diamond and core drills; drill operator on air tracs, wagon drills and similar drills; form setter/stringman on paving work; gunnite nozzleman; joint sealer kettleman; laser operator; pipelayer (sewer water and conduits); powderman tender; powerman/blaster; saw operator; tunnel laborer.

GROUP B - Air, gas, electric tool operator; barco hammer; carpenter tender; caulker; chain sawman; compressor (under 400cfm); concrete finisher tender; concrete processing materials and monitors; cutting torch on demolition; drill tender; dumpmen; electric drills; fence erectors; form line expansion joint assembler; form tamper; general laborer; grade checker; handling and placing metal mesh, dowel bars, reinforcing bars and chains; hot asphalt laborer; installing temporary traffic control devices; jackhammerman; jointer and painter(stripes); mechanical grouter; paving breaker; planting trees; shrubs and flowers; power broom (not self/propelled); power buggyman; rakers; rodman (tying reinforcing steel); sandblaster; seeding and mulching; sewer utility topman/bottom man; spaders; stressor or

stretcherman on pre or post tensioned concrete;
stringman on re/surfacing/no grade control; swinging
stage, tagline or block and tackle; tampers; timberman;
tool room men and checkers; tree climber; tree
groundman; underpinning and shoring caissons over
twelve feet deep; vibrators; walk behind trencher;
vibrating compactor; water pumps (under three inch);
work from bosun chair.
GROUP C - Scale weigh person; traffic control/ flagger,
surveillance or monitor, water carrier

POWER EQUIPMENT OPERATOR CLASSIFICATIONS - ALL ZONES

GROUP A - Asphalt laydown machine; asphalt plant; bulldozer
finish); central mix plant; concrete pump; crane;
crawler tractor pulling scraper; directional drill
(60,000(lbs) pullback and above); dragline and power
shovel; dredge engineer; excavator (over 1/2 cu. yd.)
front end loader (4 cy and over); horizontal
boring machine; master mechanic; milling machine (over
350 hp); motor grader (finish); push cat; rubber tired
backhoe (over 1/2 cu. yd.) scraper (12 cu. yd. and over
or finish); sidebroom tractor; slipform portland
concrete paver; tow or push boat; trenching machine
(Cleveland 80 or similar).

GROUP B - Articulated off road hauler, asphalt breakdown roller
(vibratory), asphalt heater/planer; asphalt material
transfer vehicle; asphalt screed; belt loader or
similar loader; bulldozer (rough); churn or
rotarydrill; concrete curb machine, crawler
tractor pulling ripper, disk or roller; directional
drill (less than 60,000(lbs) pullback); distributor;
excavator 1/2 cu. yd. and under); form riding concrete
paver; front end loader (2 to less than 4 cu. yd.);
group equipment greaser; mechanic; milling machine
(350hp. and less); paving breaker; portland concrete
dry batch plant; rubber tired backhoe 1/2 cu. yd. and
under); paving breaker; scraper (under 12 cy),
screening, washing and crushing plant (mobile,
portable or stationary); shoulder machine; skid loader
(1 cu. yd and over); subgrader or trimmer; trenching
machine; water wagon on compaction, deck/oiler.

GROUP C - Asphalt roller, boom & winch truck, concrete
spreader/belt placer, deep wells for dewatering; farm
type tractor (over 75 hp.) pulling disc or roller;
forklift; front end loader (under 2 cu. yd.); motor
grader (rough); pile hammer power unit; pump (greater
than three inch diameter); pumps on well points; safty
boat; self/propelled roller (other than asphalt);
self/propelled sand blaster or shot blaster; skid
loader (under 1 cu. yd.); truck mounted post driver.

GROUP D - Boiler, compressor, cure and texture machine; dow box;
farm type or utility tractor (under 75 hp.) pulling
disk, roller or other attachments; group greaser
tender; light plants; mechanic tender; mechanical
broom; mechanical heaters; oiler; pumps (under tree
inch diameter); tree chipping machine; truck
cranedriver/oiler.

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates
listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a
position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

On survey related matters, initial contact, including requests
for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the
Davis-Bacon survey program. If the response from this initial
contact is not satisfactory, then the process described in 2.)
and 3.) should be followed.

With regard to any other matter not yet ripe for the formal
process described here, initial contact should be with the Branch
of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an
interested party (those affected by the action) can request
review and reconsideration from the Wage and Hour Administrator
(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the
interested party's position and by any information (wage payment
data, project description, area practice material, etc.) that the
requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an
interested party may appeal directly to the Administrative Review
Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

- 4.) All decisions by the Administrative Review Board are final.
END OF GENERAL DECISION
-

SPECIFICATIONS FOR CONSTRUCTION OF

REPLACE WATER LINES - LINE 3A
P.N. 5333-23-002
IOWA AAP, IOWA

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SECTION 01040

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SECTION 01040

AS-BUILT DRAWINGS
5/00 (Rev June 2001)

PART 1 GENERAL

1.1 DEFINITIONS

The definitions listed below form a part of this specification.

1.1.1 Red-Line Drawings

Contract drawings marked-up to show actual work performed to include necessary sketches, modification drawings, shop drawings and notes. Green ink is used to indicate work deleted from the contract. Red ink is used for additions and deviations from the contract.

1.1.2 As-Built Drawings

Professional finished vellum drawings and electronic CADD files developed from the original contract drawings that include all of the information from the redline drawings and suitable for half-size reproduction.

1.1.3 Vellum Drawings

Drawings on erasable Vellum 20# similar or equal to Xerox Zero solvent vellum.

1.1.4 Black-Line Drawings

Paper drawings reproduced from vellum drawings and suitable for microfilming.

1.1.5 Full-Size Drawings

841mm x 594mm size drawings with all details visually readable.

1.1.6 Half-Size Drawings

420mm x 297mm size drawings with all details visually readable.

1.1.7 Modification Circle

A circle with a horizontal line through the center. The top half will contain the letter "P" with the bottom half containing the Modification number. The lettering standard will be 120/6 WRICO or similar.

1.1.8 Mylar Drawings

Drawings on polyester film, 3 or 5 mil, similar or equal to K & E Stabilene.

1.1.9 Electronic CADD Files

Electronic CADD files are files saved on CD-ROM in accordance with appropriate CADD standard. The CADD standard will include level on/off

status, special characters, line wieghts, font, and size requirements.

1.2 GENERAL REQUIREMENTS

The work includes creation of vellumand electronic cadd files on Microstation SE as-built drawings to accurately depict existing conditions of the project. As-Built Drawings will become the permanent record drawings of the construction. The Contractor is responsible for development of electronic CADD files in accordance with Omaha DistrictCADD standards. Omaha District's CADD standards are located on the Omaha District's FTP site (ftp://ftp.nwo.usace.army.mil/pub/ED/CADD/ae/standards/Caddstd.PDF) for Microstation. The As-Built drawings shall include all major features of the work and all details to the same level as the original contract set of drawings. All changes from the contract drawings, including but not limited to all deviations, additional information, and modifications to the contract. Where contract drawings or specifications allow for options, only the option selected and actually constructed shall be shown on the As-Built Drawings. Systems designed or enhanced by the Contractor such as HVAC control system, fire alarm system fire sprinkler system, irrigation sprinkler system, letters of clarification, shall be accurately and neatly recorded on the As-Built Drawings using the same symbols, terminology, and general quality as the original set of contract drawings. All sheets affected by a change shall be revised. The transmittal requirements for the As-built Drawings shall be shown as events on the Contractor prepared progress chart or network analysis system (NAS), whichever is applicable.

1.3 PAYMENT

In accordance with the clause "Payment Under Fixed - Price Construction Contracts", which provides for progress payments on estimates of work accomplished (which meets the standards of quality established under the contract), \$11,500 will be withheld from payment for the creation of As-Built drawings until the final as-built drawings are delivered to the Contracting Officer (including any necessary revisions and subject to the approval of the Contracting Officer).

1.4 TRANSMITTAL OF AS-BUILT DRAWINGS

1.4.1 Preliminary As-Built Drawings

The Contractor shall produce Preliminary As-Built Drawings indicating as-built conditions on Microstation SE with "clouding". Preliminary drawings shall consist of 15% of total project drawings. The As-Built CADD files which include all changes up to the time Preliminary Drawings shall be sent as stated below. The Contractor shall draw attention to all drawing changes by "clouding" the affected area. This "clouding" will be accomplished on layer 63 of the drawing file. The Preliminary Drawings shall consist of one (1) set of CADD files on a CD and one (1) full-size set of the Black-Line Drawings. One (1) set of CADD files on a CD shall be submitted to the Omaha District Office (ATTN: CENWO-ED-DI, Jim Janicek). One (1) full-size of the Black-Line Drawings shall be submitted to the COR.

Both documents shall be submitted three (3)weeks prior to the final acceptance inspection unless otherwise directed by the COR. The COR will notify the Contractor in writing of approval / disapproval. The Contractor shall not submit the Final Drawings until he receives the COR's letter approving the Preliminary Drawings.

1.4.2 Final As-Built Drawings

The Contractor shall produce Final As-Built Drawings on Microstation SE without "clouding". The Final Drawings shall include all changes. The Final Drawings shall be submitted to the COR and Omaha District Office (CENWO-ED-DI) no earlier than the day of acceptance of the project and no later than thirty (30) days after the date on the acceptance letter for the Preliminary Drawing unless otherwise directed by the COR. (Note: Final drawings should not be forwarded to the customer. Corps of Engineers, Omaha District COR will forward to the customer after Quality Review.) One (1) set of CADD files on a CD shall be submitted to the Omaha District Office (ATTN: CENWO-ED-DI, Jim Janicek). Send the following documents to the COR: One (1) set of CADD files on CD (folder name containing as-built files shall be designated "AS-BUILTS" on each CD-ROM). Both CD case and CD shall contain the name of the project, location, specification number, and contract number, and words "As-Built Record Set"). The folder shall contain drawings, indexes and X-REF files related to all as-builts and one full-size set of vellum As-Built Drawings, along with all red-lined drawings prepared by the Contractor during construction.

1.5 PROCEDURE

Within 30 days after Notice to Proceed, the Government will furnish the Contractor one full size set of contract drawings on bond paper. One (1) CD containing the contract drawings and CADD standards in Microstation SE , format for use in the preparation of As-Built Drawings by the Contractor, will be forwarded to the Resident Engineer. This CD will then be furnished to the Contractor after signed receipt to the Resident Engineer. The Contractor shall create a set of electronic Cadd files and full-size Red-Line Drawings to fully indicate As-Built conditions. The Red-Line Drawings shall be maintained at the site, in a current condition until the completion of the work and shall be available for review by the COR at all times. All as-built conditions shall be on the Red-Line Drawings within two (2) days after the work activity is completed or shall be entered on the deficiency tracking system (see Section 01451, CONTRACTOR QUALITY CONTROL).

1.6 TITLE BLOCKS

The contract number and the specification number (if available) shall be shown on all sheets. "RECORD DRAWING" shall be added below the title block on all sheets. All modifications to the contract shall be posted in ascending order. The top line of the revision box shall state "REVISED TO SHOW AS-BUILT CONDITIONS" and dated. All modifications to all plans, sections, or details, shall have a modification number placed in the revision box under column entitled "Symbol". The statement "GENERAL REVISIONS" may be used when applicable. The date to be added in the revision box for modifications is found in Block 3 of Form SF-30. Cover Sheet will have Contract Award Set changed to As-Built Record Set with month & year completed. Month and year completed will also go in the date box in the title block. There will be no separate dates.

1.7 PROCEDURES FOR POSTING MODIFICATION CHANGES TO DRAWINGS

Follow directions in the modification for posting descriptive changes.

A Modification Circle shall be place at the location of each deletion.

The highest modification number on the sheet should be shown in

the modification circle in the "DATE" and "DRAWING CODE" boxes of the title block.

For all new details or sections that are added to a drawing, place a Modification Circle by the detail or section title.

For changes to a drawing, place a Modification Circle by the title of the affected plan, section or detail titles (each location).

For changes to schedules on drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.

The Modification Circle size shall be 1/2-inch diameter unless the area where circle is to be placed is crowded. Use smaller size circle for crowded areas.

1.8 WORD ABBREVIATIONS

Abbreviations shown on the abbreviation sheet shall be used to describe all work items. Additional word abbreviations, not found on the abbreviation sheet but necessary to describe the work, shall be properly identified and incorporated with the other standard word abbreviations.

1.9 LEGEND SHEETS

Symbols, which conflict with those on the original contract legend sheet, shall not be used. Additional symbols, properly identified, necessary to depict any additional work items, shall be added to the legend sheet or supplemental legend. Those projects that do not have legend sheets may use supplemental legends on each sheet where symbol is shown.

1.10 CONTRACTOR SHOP DRAWINGS

Contractor shop drawings, which supersede data on the contract plans and/or additional drawings, prepared by the Contractor, shall be incorporated into the As-Built Drawings. Design plans prepared by Contractor shall include the designer's name on the As-Built Drawings.

1.11 INDEXING OF DRAWINGS

If drawings are added to the portfolio of drawings to depict as-built conditions, the index of drawings shall be revised accordingly.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL

As-Built drawings shall include as-built information to the same level of detail as shown on the original details, unless otherwise specified. The Contractor shall provide any additional full-size drawings as required to display all the details.

3.2 SITE WORK

3.2.1 Utilities

All utilities shall be shown whether active, inactive, shown on the original contract drawings, or found on-site. The type of utility,

location, general direction, size, material make-up and depth shall be shown. The location and description of any utility line or other installations of any kind known to exist within the construction area shall be shown. The location shall include dimensions to permanent features.

3.2.2 Structures

Structures above and below ground shall be shown. The size, material make-up, location, height, and/or depth shall be shown. Manholes shall show rim elevation and invert elevations as applicable. Power poles shall show electrical equipment and voltage rating.

3.2.3 Grades

Grade or alignment of roads, structures, or utilities shall be corrected if any changes were made from the contract drawings. Elevations shall be corrected if changes were made in site grading.

3.3 MECHANICAL

3.3.1 Not Used

3.3.2 Plumbing

Piping and fixtures shall be shown to reflect the type of material, size and the route or location.

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01200

WARRANTY OF CONSTRUCTION

5/00

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- 1.2 ADDITIONAL WARRANTY REQUIREMENTS
 - 1.2.1 Performance Bond
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PART 3 NOT USED

-- End of Section Table of Contents --

SECTION 01200

WARRANTY OF CONSTRUCTION

5/00

PART 1 GENERAL

1.1 WARRANTY OF CONSTRUCTION

(a) Foremost and in addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph 1.1 (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall commence for that part on the date of possession and continue for a period of 1 year.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1)The Contractor's failure to conform to contract requirements;
or

(2)Any defect of equipment, material, workmanship, or design
furnished by the Contractor.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause.

(e) The Contractor's warranty with respect to work restored, repaired or replaced will run for 1 year from the date of restoration, repair or replacement. This provision applies equally to all items restored, repaired, or replaced under paragraph (c) and (d)above.

(f) The Government will notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage. Repair work necessary to correct a warranty condition which arises to threaten the health or safety of personnel, the physical safety of property or equipment, or which impairs operations, habitability of living spaces, etc., will be performed by the Contractor on an immediate basis as directed verbally by the Government. Written verification will follow verbal instruction.

(g) Failure of the Contractor to respond as verbally directed will be cause for the Contracting Officer or his authorized representative to have the warranty repair work performed by others and to proceed against the Contractor as outlined in the paragraph 1.2.1 (a). If the

Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense, as outlined in paragraph 1.2.1.(a).

(h) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall-

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government.

(i) Unless a defect is caused by the negligence of the Contractor or Subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's right under the Inspection and Acceptance Clause of this contract with respect to latent defect, gross mistakes, or fraud.

1.2 ADDITIONAL WARRANTY REQUIREMENTS

1.2.1 Performance Bond

(a) It is understood that the Contractor's Performance Bond will remain effective for one (1) year from the date of acceptance.

(b) If either the Contractor or his representative doesn't diligently pursue warranty work to completion, the contractor and surety will be liable for all costs. The Government, at its option, will either have the work performed by others or require the surety to have it done. Both direct and administrative costs will be reimbursable to the Government.

1.2.2 Pre-Warranty Conference

(a) Prior to contract completion and at a time designated by the Contracting Officer or his authorized representative, the Contractor shall meet with the Contracting Officer or his authorized representative to develop a mutual understanding with respect to the requirements of the Paragraph: WARRANTY OF CONSTRUCTION. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect and other details deemed necessary by the Contracting Officer or his authorized representative for the execution of the construction warranty shall be established/reviewed at this meeting.

(b) In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of the service representative which is authorized to initiate and pursue warranty work action on behalf of the Contractor and surety. This single point of contact will be located within the local service area of the warranted construction, will be continuously available, and will be responsive to

Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any Contractual responsibilities in connection with the paragraph: WARRANTY OF CONSTRUCTION.

(c) Local service area is defined as the area in which the contractor or his representative can meet the response times as described in paragraph 1.2.4 and in any event shall not exceed 200 miles radius of the construction site.

1.2.3 Not Used

1.2.4 Warranty Service Calls

The Contractor or his local service representative will respond to the site, to a call within the time periods as follows: Twenty-Four (24) hours For All Systems.

1.2.5 Equipment Warranty Booklet

At or before 30 days prior to final inspection and acceptance of the work, the Contractor shall submit the data mentioned as follows:

The Contractor shall provided a Booklet, which consists of a listing of all equipment items (see paragraphs a. and b. below) which are specified to be guaranteed along with the warranty papers for each piece of equipment. Three (3) legible bound copies of the booklet shall be submitted for approval and shall be indexed alphabetically by equipment type. For each specific guaranteed item, the name, address, and telephone number shall be shown on the list for the subcontractor who installed equipment, equipment supplier or distributor, and equipment manufacturer. Completion date of the guarantee period shall correspond to the applicable specification requirements for each guaranteed item. The names of service representatives that will make warranty calls along with the day, night, weekend and holiday contacts for response to a call within the time period specified shall also be identified.

a. For Equipment in Place: The equipment list shall show unit retail value and nameplate data including model number, size, manufacturer, etc. This would include capital equipment and other nonexpendable supplies of a movable nature that are not affixed as an integral part of the facility and may be removed without destroying or reducing the usefulness of the facility. Some examples are spare parts, special tools, manufacturing equipment, maintenance equipment, instruments, installed under this contract.

b. For Installed Building Equipment: The equipment list shall show unit retail value and nameplate data including model number, size, manufacturer, etc. This would include items of equipment and furnishings (including material for installation thereof), which are required to make the facility usable and are affixed as a permanent part of the structure. Some examples are plumbing fixtures, laboratory counters and cabinets, kitchen equipment, mechanical equipment, electrical equipment, and fire protection systems installed under this contract.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation;

submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

Equipment Warranty Booklet;

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01330

SUBMITTAL PROCEDURES

09/01; Omaha Update 10/01

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SECTION 01330

SUBMITTAL PROCEDURES
09/01; Omaha Update 10/01

PART 1 GENERAL

Attachments: Submittal Register
ENG Form 4025, Transmittal Form

1.1 CONTRACTOR RESPONSIBILITIES

The Contractor is responsible for total management of his work including scheduling, control, and certification of all submittals. The submittal management system provided in these specifications is intended to be a complete system for the Contractor to use to control the quality of materials, equipment and workmanship provided by manufacturers, fabricators, suppliers and subcontractors. The Contractor shall review each submittal for contract compliance. Submittals that comply will be forwarded to the Government. Submittals that do not conform will be returned to the originator to be corrected. The Submittal Register (ENG Form 4288) will be utilized to log and monitor all submittal activities. No construction or installation activities shall be performed prior to required approvals of applicable submittals. The Contractor shall perform a check to assure that all materials and/or equipment have been tested, submitted and approved during the preparatory phase of quality control inspections.

1.2 SUBMITTAL IDENTIFICATION (SD)

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

In addition, the following items are included:

Construction Progress Schedule
Health and safety plan
Work plan
Quality control plan
Environmental protection plan
Permits

SD-02 Shop Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged. Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

SD-07 Certificates

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

Statement signed by an official authorized to certify on behalf of the manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements. The statement must be dated after the award of the contract, must state the Contractor's name and address, must name the project and location, and must list the specific requirements which are being certified.

Confined space entry permits.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

Factory test reports.

SD-10 Operation and Maintenance Data

Data intended to be incorporated in operations and maintenance manuals.

SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

In addition, the following items are included:

As-built drawings

Special warranties

Posted operating instructions

Training plan

1.3 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.3.1 Government Approved

Governmental approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings." All submittals noted in the technical specifications and Submittal Register as "G-ED" or "G-RE" are subject to Government Approval.

1.3.2 Information Only (FIO)

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above. The Contracting Officer has the option to review any submittal.

1.4 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.5 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.6 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

1.7 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.8 SUBMITTAL REGISTER AND ENG FORM 4288 (RMS) SUBMITTAL REGISTER

At the end of this section is a submittal register (submittal form) showing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. The attached submittal register identifies only the submittal section, type of submittal, description of item submitted, paragraph number related to submittal item (section submittal paragraph if none listed), submittal classification (G), and submittal reviewer identifier (ED, AE or RE). Any submittal without a submittal classification and submittal reviewer identifier is considered to be For Information Only (FIO). The submittal register generated by the Government Resident Management System (RMS) Software is used for tracking construction submittals and is referred to as ENG Form 4288 (RMS). The Contractor shall maintain an ENG Form 4288 (RMS) for the project in accordance with the attached ENG Form 4288 (RMS) Instructions. The Contractor will be furnished one (1) set of ENG Forms 4288 (RMS) at the preconstruction conference. Much of the same information contained on the attached submittal register will be included on the ENG Forms 4288 (RMS) furnished to the Contractor. The Contractor shall complete the appropriate columns as indicated on the attached ENG Form 4288 (RMS) Instructions and return six (6) completed copies to the Contracting Officer for approval within 20 calendar days after the preconstruction conference. The ENG Form 4288 (RMS) will become a part of the contract after approval. The TRANSMITTAL NUMBER AND ITEM NUMBER shall be left blank for use later to record the respective transmittal and item number corresponding to those listed on the transmittal form entitled: "TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE" (ENG Form 4025). The approved ENG Form 4288 (RMS) will become the scheduling document and will be used to control submittals throughout the life of the contract. The ENG Form 4288 (RMS) and the progress schedules shall be coordinated.

1.9 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 20 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

1.10 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.11 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

1.11.1 Procedures

1.11.1.1 "G-ED Submittals

All items listed as "G-ED" submittals in the various sections or on the Submittal Register shall be mailed directly to the addressee shown below as directed. For each submittal, a completed information copy of the attached transmittal form shall also be mailed to the Area Engineer and Resident Engineer.

Technical Reviewer

Engineering Division (ED)
Attn: CENWO-ED-DI
U.S. Army Engineer District, Omaha
106 South 15th Street
Omaha, NE 68102-1618

Each required submittal which is in the form of a drawing shall be submitted as seven (7) prints of the drawing. Drawing prints shall be either blue or black line permanent-type prints on a white background or blueprint and shall be sufficiently clear and suitable for making legible copies.

All catalog and descriptive data shall be submitted in seven (7) copies. Catalog cuts and other descriptive data which have more than one model, size, or type or which shows optional equipment shall be clearly marked to show the model, size, or type and all optional equipment which is proposed for approval. Submittals on component items forming a system or that are interrelated shall be submitted at one time as a single submittal in order to demonstrate that the items have been properly coordinated and will function as a unit.

1.11.1.2 "G-RE" and FIO Submittals

Except as noted below, data for all items listed as "G-RE" or FIO Submittals in the various sections shall be submitted in five (5) copies to the Area Engineer using the transmittal form. Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed) accompanied by five (5) copies of the transmittal form.

1.11.1.3 Certificates of Compliance

Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

1.11.1.4 Purchase Orders

Copies of purchase orders shall be furnished to the Contracting Officer when the Contractor requests assistance for expediting deliveries of equipment or materials, or when requested by the Contracting Officer for the purpose of quality assurance review. Each purchase order issued by the Contractor or his subcontractors for materials and equipment to be incorporated into the project shall (1) be clearly identified with the applicable DA contract number, (2) carry an identifying number, (3) be in sufficient detail to identify the material being purchased, (4) indicate a definite delivery date, and (5) display the DMS priority rating, if applicable.

1.11.1.5 Operation and Maintenance Instructions and/or Manuals

Where required by various technical sections, operations and maintenance instructions and/or manuals with parts lists included shall be provided by the Contractor in quintuplicate, unless otherwise specified, and shall be assembled in three-ring binders with index and tabbed section divider and having a cover indicating the contents by equipment or system name and project title and shall be submitted for approval to the Contracting Officer 90 days prior to final tests of mechanical and electrical systems, unless otherwise specified. Each operation and maintenance manual shall contain a copy of all warranties and a list of local service representatives required by Section 01200 Warranty of Construction. If field testing requires these copies to be revised, they shall be updated and resubmitted for approval within 10 calendar days after completion of tests.

1.11.1.6 Interior/Exterior Finish Sample and Data

All submittals for interior finish samples and data shall be submitted concurrently and all submittals for exterior finish samples and data shall be submitted concurrently.

1.11.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.12 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.13 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated.

1.13.1 "G-ED" Submittals

The drawing print and five (5) sets of all catalog data and descriptive

literature and drawing prints will be retained by the Contracting Officer and two (2) sets of catalog data and descriptive literature and drawing prints will be returned to the Contractor.

1.13.2 "G-RE" Submittals

Two (2) copies of "G-RE" submittals for approval will be returned to the Contractor except for samples, test cylinders, and O&M manuals for which two (2) copies of the transmittal form only will be returned to the Contractor.

1.14 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.15 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

| | |
|-------------|--|
| CONTRACTOR | |
| (Firm Name) | |
| _____ | Approved |
| _____ | Approved with corrections as noted on submittal data and/or attached sheets(s). |
| SIGNATURE: | _____ |
| TITLE: | _____ |
| DATE: | _____ |

INSTRUCTIONS
ENG FORM 4288 (RMS)

1. The Contractor shall utilize the ENG Form 4288 (RMS) generated by the Government Residential Management System (RMS) software for tracking construction submittals. The Submittal Register information, columns (c) thru (f) from the Submittal Forms furnished with this solicitation, will be utilized by the Government to generate the ENG Form 4288 (RMS). The Government will furnish the Contractor a hard copy of the ENG Form 4288 (RMS) at the preconstruction conference. The ENG Form 4288 (RMS) includes the following items and parties responsible for completing the information required on the ENG Form 4288 (RMS):

a. Activity Number: will be provided by the Contractor from his Network Analysis, if required, and when a network analysis is accepted.

b. Transmittal Number and Item Number: will be provided by the Contractor from ENG Form 4025 for each item.

c. Specification Paragraph Number: will be provided by the Government from the Submittal Register from column entitled "Specification Paragraph Number".

d. Description of Submittal: will be provided by the Government from the Submittal Register from column entitled "Description of Item Submitted".

e. Type of Submittal: will be provided by the Government from the Submittal Register from column entitled "Type of Submittal" or "Description of Item Submitted".

f. Classification: will be provided by the Government from the Submittal Register from column entitled "Classification".

g. Reviewing Office - Reviewer: will be provided by the Government from the Submittal Register from column entitled "Classification" or "Reviewer".

h. Contractor Schedule Dates: the Contractor will provide schedule dates for

"Submit Needed By" (Date the Contractor expects to submit an item. It is the Contractors responsibility to calculate the lead time needed for the government approval. Note if resubmittal is required it is the Contractors responsibility to make all adjustments necessary to meet the contract completion date.)

"Approval Needed By" (date the Contractor can receive approval and still obtain the material by need date.), and

"Material Needed By" (date that the material is needed at the site. If there is a network analysis it should reflect that date on the analysis.)

i. Contractor Action: Includes the following items: "Code" and "Submit to the Corps". These items will be completed by the Contractor. The action codes will be one of the following:

A - Approved as submitted.

B - Approved, except as noted.

C - Approved, except as noted. Refer to attached sheet resubmission required.

G - Other (specify)

j. Government Action: This item includes a Government Action "Code" and "Date" and is reserved for Government use. The Government reserves the right to review any submittal for contract compliance. Receipt of an Action Code "F - Receipt Acknowledged" or failure of the Contractor to receive an Action Code by the Government, does not mean that the submittal is in compliance with the contract requirements. When used by the Government, the action code will be one of the following:

A - Approved as submitted.

B - Approved except as noted on drawings.

C - Approved, except as noted on drawings. Refer to attached ____ sheet resubmission required.

D - Will be returned by separate correspondence.

E - Disapproved (See Attached).

F - Receipt Acknowledged.

Fx - Receipt acknowledged, does not comply as noted with contract requirements.

G - Other (specify).

2. Reviewer Abbreviation code will be as follows;

G-ED or G-RE - Government Approved

For Information Only - Any submittal without a Government Approved abbreviation code.

INSTRUCTIONS
ENG FORM 4025

1. DATE at the top of form will be the date submitted to the Government which is to be completed by the Contractor.
2. TRANSMITTAL NO. Each new transmittal (i.e. G-AE, G-ED, G-RE or FIO) shall be numbered consecutively in the space provided in "Transmittal No.". This number will be the identifying symbol for each submittal. Example: "G-ED-001", "G-AE-002" "G-RE-003", "FIO-004", etc. For each new submittal or for a resubmittal, the appropriate box must be marked. Resubmittals must be designated by their original sequential number followed by an ".1", ".2", etc. for each sequential resubmittal. Example: "G-ED-001.1" (previous submittal No. G-ED-001).
3. TO: Box will contain the name and address of the office which will review the submittal. The name and address should be given in paragraph 3.5. Contractor is to complete this box after reviewing the classification provided by the government on Eng Form 4288 column f and determining the proper address.
4. FROM: Box will be the name and address of the Contractor. Contractor is to complete this box.
5. CONTRACT NO. box will contain the Contractors construction contract number (e.g., DACXXX-XX-C-XXXX).
6. CHECK ONE box will be completed by the Contractor with one box marked. If a resubmittal is provided last transmittal number will be added.
7. SPECIFICATION SECTION NO. box will be completed by the Contractor. The number will be the five digit number found in the specifications. No more than one section will be covered with each transmittal.
8. PROJECT TITLE AND LOCATION box will be completed by the Contractor.
9. Column a, will be completed by the Contractor and will contain a different number for each item submitted in that transmittal. Once a number is assigned to an item it will remain the same even if there is a resubmittal.
10. Column b, will be completed by the Contractor. The description of each item on this form will include the descriptions provided on the submittal register plus any other data necessary to describe the item. The Contractor shall submit each submittal register item all at once on one transmittal if possible. If a submittal register item can not be submitted all at once Contractor should note that in the remarks box. If a submittal register item requires several items, description shall contain submittal register description plus any additional specific descriptions. Additional items not on the submittal register will be noted in the remarks box.
11. Column c, will be completed by the Contractor. The information will be the appropriate submittal description number as described this Section or shown on the submittal register (e.g. SD-XX).
12. Column d, will be completed by the Contractor. The number of copies will be determined by the Contractor after review of submittal register for the classification of the item and after review of paragraph: SUBMITTAL

PROCEDURES of this Section.

13. Column e, will be completed by the Contractor. The Contractor shall state all applicable paragraph numbers.

14. Column f, will be completed by the Contractor. The Contractor shall state all applicable drawing sheet numbers.

15. Column g, will be completed by the Contractor. The action codes will be one of the following:

- A - Approved as submitted.
- B - Approved, except as noted.
- C - Approved, except as noted. Refer to attached sheet resubmission required.
- G - Other (specify)

16. Column h, will be completely by the Contractor. A check shall be placed in this column when a submittal is not in accordance with the plans and specifications also, a written statement to that effect shall be included in the space provided for "Remarks".

17. Column i, is reserved for Government use and may or may not be provided. When used by the Government, the action code will be one of the following:

- A - Approved as submitted.
- B - Approved except as noted on drawings.
- C - Approved, except as noted on drawings. Refer to attached ____ sheet resubmission required.
- D - Will be returned by separate correspondence.
- E - Disapproved (See Attached).
- F - Receipt Acknowledged.
- Fx - Receipt acknowledged, does not comply as noted with contract requirements.
- G - Other (specify).

18. REMARKS box self explained.

19. Contractor must sign all Eng Form 4025 certifying conformance.

20. Section II will be completed by the Government. Contractor is not to write in this space.

See reverse side of ENG Form 4025 for additional instructions.

-- End of Section --

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

Replace Waterlines Line 3A, Iowa AAP, Iowa

CONTRACTOR

| ACTIVITY NO | TRANSMITTAL NO | SPEC SECT | DESCRIPTION ITEM SUBMITTED | PARAGRAPH | GOVT CLASSIFICATION OR REVIEW | CONTRACTOR: SCHEDULE DATES | | | CONTRACTOR ACTION | | DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR | APPROVING AUTHORITY | | | | MAILED TO CONTR/ DATE RCD FRM APPR AUTH | REMARKS |
|----------------|-------------------|--------------|----------------------------------|-----------|--|-------------------------------|--------------------------|--------------------------|----------------------|----------------------|--|----------------------------------|----------------------------------|----------------|----------------------|--|---------|
| | | | | | | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | ACTION CODE | DATE OF ACTION | | DATE FWD TO OTHER REVIEWER | DATE RCD FROM OTH REVIEWER | ACTION CODE | DATE OF ACTION | | |
| (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | (q) | (r) |
| | | 01200 | SD-11 Closeout Submittals | | | | | | | | | | | | | | |
| | | | Equipment Warranty Booklet | 1.2.5 | | | | | | | | | | | | | |
| | | 01351 | SD-06 Test Reports | | | | | | | | | | | | | | |
| | | | Monitoring/Sampling Results | | | | | | | | | | | | | | |
| | | | Site Control Log | 1.19.2 | | | | | | | | | | | | | |
| | | 01355 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | |
| | | | Environmental Protection Plan | 1.7 | G RE | | | | | | | | | | | | |
| | | 01400 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | |
| | | | Accident Prevention Plan | | G RE | | | | | | | | | | | | |
| | | 01450 | SD-03 Product Data | | | | | | | | | | | | | | |
| | | | Sampling and Analysis Plan | 3.4 | G RE | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | |
| | | | Analytical Data Package | | G RE | | | | | | | | | | | | |
| | | | Field Testing Results | | | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | |
| | | | Laboratory Approval | 1.5 | G RE | | | | | | | | | | | | |
| | | | FADC | 3.3.1 | G RE | | | | | | | | | | | | |
| | | 01560 | SD-05 Design Data | | | | | | | | | | | | | | |
| | | | Notice of Intent | 3.2.1 | | | | | | | | | | | | | |
| | | | Notice of Discontinuation | 3.2.5 | | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | |
| | | | Reports | 3.2.3 | | | | | | | | | | | | | |
| | | 02316 | SD-06 Test Reports | | | | | | | | | | | | | | |
| | | | Field Density Tests | 3.4.3 | | | | | | | | | | | | | |
| | | | Testing of Backfill Materials | 3.4.2 | | | | | | | | | | | | | |
| | | 02453 | SD-03 Product Data | | | | | | | | | | | | | | |

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

Replace Waterlines Line 3A, Iowa AAP, Iowa

CONTRACTOR

| ACTIVITY NO | TRANSMITTAL NO | SPEC SECT | DESCRIPTION ITEM SUBMITTED | PARAGRAPH | GOVT CLASSIFICATION | CONTRACTOR: SCHEDULE DATES | | | CONTRACTOR ACTION | | DATE FWD TO APPR AUTH/ | APPROVING AUTHORITY | | | | MAILED TO CONTR/ DATE RCD FRM APPR AUTH | REMARKS |
|-------------|----------------|-----------|----------------------------------|-----------|---------------------|-------------------------------|--------------------------|--------------------------|----------------------|----------------------|------------------------------|----------------------------------|----------------------------------|----------------|----------------------|--|---------|
| | | | | | | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | ACTION CODE | DATE OF ACTION | DATE RCD FROM CONTR | DATE FWD TO OTHER REVIEWER | DATE RCD FROM OTH REVIEWER | ACTION CODE | DATE OF ACTION | | |
| (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | (q) | (r) |
| | | 02453 | Protective Light Weight Concrete | 2.3 | G ED | | | | | | | | | | | | |
| | | | Emergency Contingency Plan | 3.5.1 | G RE | | | | | | | | | | | | |
| | | | Work Plan | 1.6.1 | G RE | | | | | | | | | | | | |
| | | | Jacking and Boring Equipment | 1.6.1.1 | G RE | | | | | | | | | | | | |
| | | | Jacking Details | 1.6.1.2 | G RE | | | | | | | | | | | | |
| | | | Dewatering and Ground Water | 1.6.3 | G RE | | | | | | | | | | | | |
| | | | Control | | | | | | | | | | | | | | |
| | | | SURFACE SETTLEMENT | | G RE | | | | | | | | | | | | |
| | | | MONITORING | | | | | | | | | | | | | | |
| | | | SD-02 Shop Drawings | | | | | | | | | | | | | | |
| | | | As-Builts | 1.6.4 | G ED | | | | | | | | | | | | |
| | | | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | |
| | | | Schedule | 3.4 | G RE | | | | | | | | | | | | |
| | | | Qualifications | 1.4 | G ED | | | | | | | | | | | | |
| | | | Accident Prevention Plan; | | G RE | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | |
| | | | Certification Safety Personnel | 1.4.3 | G RE | | | | | | | | | | | | |
| | | 02510 | SD-03 Product Data | | | | | | | | | | | | | | |
| | | | Installation | 3.1 | | | | | | | | | | | | | |
| | | | Waste Water Disposal Method | | | | | | | | | | | | | | |
| | | | Satisfactory Installation | | | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | |
| | | | Bacteriological Disinfection | 3.3.1 | | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | |
| | | | Manufacturer's Representative | 1.4 | G RE | | | | | | | | | | | | |
| | | | Installation | 3.1 | G RE | | | | | | | | | | | | |

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

Replace Waterlines Line 3A, Iowa AAP, Iowa

CONTRACTOR

| ACTIVITY NO | TRANSMITTAL NO | SPEC SECT | DESCRIPTION ITEM SUBMITTED | PARAGRAPH | GOVT CLASSIFICATION | CONTRACTOR: SCHEDULE DATES | | | CONTRACTOR ACTION | | DATE FWD TO APPR AUTH/ | APPROVING AUTHORITY | | | | MAILED TO CONTR/ DATE RCD FRM APPR AUTH | REMARKS |
|-------------|----------------|-----------|---|-----------|---------------------|-------------------------------|--------------------------|--------------------------|----------------------|----------------------|------------------------------|----------------------------------|----------------------------------|----------------|----------------------|--|---------|
| | | | | | | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | ACTION CODE | DATE OF ACTION | DATE RCD FROM CONTR | DATE FWD TO OTHER REVIEWER | DATE RCD FROM OTH REVIEWER | ACTION CODE | DATE OF ACTION | | |
| (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | (q) | (r) |
| | | 02540 | SD-02 Shop Drawings | | | | | | | | | | | | | | |
| | | | Shop Drawings | | G RE | | | | | | | | | | | | |
| | | | Detailed Descriptive Drawings | | G RE | | | | | | | | | | | | |
| | | | As-Built Drawings | | G ED | | | | | | | | | | | | |
| | | | SD-08 Manufacturer's Instructions | | | | | | | | | | | | | | |
| | | | Material Safety and Data Sheets (MSDS) | | G RE | | | | | | | | | | | | |
| | | | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | |
| | | | Schedule | | G RE | | | | | | | | | | | | |
| | | | WORK PLAN | 1.7 | G RE | | | | | | | | | | | | |
| | | | Protection of Existing Storm Drains | | G RE | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | |
| | | | QUALIFICATIONS | | G ED | | | | | | | | | | | | |
| | | | Hydrostatic/Pressure Checks | | G RE | | | | | | | | | | | | |
| | | | Accident Prevention Plan | | G RE | | | | | | | | | | | | |
| | | 02563 | SD-06 Test Reports | | | | | | | | | | | | | | |
| | | | Aggregate Moisture-Density Relationships | | G RE | | | | | | | | | | | | |
| | | | Base Course | 3.6 | G RE | | | | | | | | | | | | |
| | | | Base Course | 3.6.1 | G RE | | | | | | | | | | | | |
| | | | Base Course | 3.6.2 | G RE | | | | | | | | | | | | |
| | | | Certified Refinery Analysis | 3.5 | G RE | | | | | | | | | | | | |
| | | | Bituminous Surface Course | 3.4 | G RE | | | | | | | | | | | | |
| | | | Aggregate | 3.4 | G RE | | | | | | | | | | | | |
| | | | Aggregate | 3.7.1 | G RE | | | | | | | | | | | | |

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

Replace Waterlines Line 3A, Iowa AAP, Iowa

CONTRACTOR

| ACTIVITY NO | TRANSMITTAL NO | SPEC SECT | DESCRIPTION ITEM SUBMITTED | PARAGRAPH | GOVT CLASSIFICATION REVIEW | CONTRACTOR: SCHEDULE DATES | | | CONTRACTOR ACTION | | DATE FWD TO APPR AUTH/ | APPROVING AUTHORITY | | | | MAILED TO CONTR/ DATE RCD FRM APPR AUTH | REMARKS |
|-------------|----------------|-----------|----------------------------------|-----------|----------------------------|-------------------------------|--------------------------|--------------------------|----------------------|----------------------|------------------------------|----------------------------------|----------------------------------|----------------|----------------------|--|---------|
| | | | | | | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | ACTION CODE | DATE OF ACTION | DATE RCD FROM CONTR | DATE FWD TO OTHER REVIEWER | DATE RCD FROM OTH REVIEWER | ACTION CODE | DATE OF ACTION | | |
| (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | (q) | (r) |
| | | 02563 | Portland Cement Concrete | 3.7.1 | G RE | | | | | | | | | | | | |
| | | | Joint Sealant | 3.7.1 | G RE | | | | | | | | | | | | |
| | | | Joint Fillers | 3.7.1 | G RE | | | | | | | | | | | | |
| | | | Temperature-viscosity | 3.5.2 | G RE | | | | | | | | | | | | |
| | | 02921 | SD-03 Product Data | | | | | | | | | | | | | | |
| | | | Equipment | | | | | | | | | | | | | | |
| | | | Surface Erosion Control Material | 2.7 | | | | | | | | | | | | | |
| | | | Chemical Treatment Material | | G RE | | | | | | | | | | | | |
| | | | Delivery | 1.4.1 | | | | | | | | | | | | | |
| | | | Finished Grade and Topsoil | 3.2.1 | | | | | | | | | | | | | |
| | | | Topsoil | 2.2 | | | | | | | | | | | | | |
| | | | Quantity Check | 3.5 | | | | | | | | | | | | | |
| | | | Seed Establishment Period | 3.9 | | | | | | | | | | | | | |
| | | | Maintenance Record | 3.9.3.5 | | | | | | | | | | | | | |
| | | | Application of Pesticide | 3.6 | G RE | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | |
| | | | Equipment Calibration | 3.1.3 | | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | |
| | | | Seed | 2.1 | G RE | | | | | | | | | | | | |
| | | | Topsoil | 2.2 | | | | | | | | | | | | | |
| | | | Fertilizer | 2.3.1 | | | | | | | | | | | | | |
| | | | Organic Material | 2.3.2 | | | | | | | | | | | | | |
| | | | Soil Conditioner | 2.3.3 | | | | | | | | | | | | | |
| | | | Mulch | 2.4 | | | | | | | | | | | | | |
| | | | Pesticide | 2.6 | G RE | | | | | | | | | | | | |
| | | | SD-04 Samples | | | | | | | | | | | | | | |

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|--------------|
| CONTRACT NO. |
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Replace Waterlines Line 3A, Iowa AAP, Iowa

CONTRACTOR:
SCHEDULE DATES

APPROVING AUTHORITY

[illegible]

GOVT OR A / E REVWR
CLASSIFICATION

SUBMIT

APPROVAL
NEEDED
BY

MATERIAL
NEEDED
BY

ACTION CODE

DATE
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| | DATE RCD FROM CONTR |

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| TO OTHER | |
| REVIEWER | |

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FROM OTH
REVIEWER

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TO
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AUTH

REMARKS

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Delivered Topsoil

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| TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE <i>(Read instructions on the reverse side prior to initiating this form)</i> | | | | | DATE | | TRANSMITTAL NO. | |
|---|--|---|----------------------------|-----------------------------|--|-------------------------|---|-----------------|
| SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS <i>(This section will be initiated by the contractor)</i> | | | | | | | | |
| TO: | | | FROM: | | CONTRACT NO. | | CHECK ONE: <input type="checkbox"/> THIS IS A NEW TRANSMITTAL <input type="checkbox"/> THIS IS A RESUBMITTAL OF TRANSMITTAL _____ | |
| SPECIFICATION SEC. NO. <i>(Cover only one section with each transmittal)</i> | | | PROJECT TITLE AND LOCATION | | | | CHECK ONE: THIS TRANSMITTAL IS FOR <input type="checkbox"/> FIO <input type="checkbox"/> GOV'T. APPROVAL | |
| ITEM NO. | DESCRIPTION OF ITEM SUBMITTED <i>(Type size, model number/etc.)</i> | MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. <i>(See instruction no. 8)</i> | NO. OF COPIES | CONTRACT REFERENCE DOCUMENT | | FOR CONTRACTOR USE CODE | VARIATION <i>(See instruction No. 6)</i> | FOR CE USE CODE |
| a. | b. | c. | d. | SPEC. PARA. NO. e. | DRAWING SHEET NO. f. | g. | h. | i. |
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| REMARKS | | | | | I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated. <div style="border-top: 1px solid black; text-align: center; margin-top: 20px;"> NAME AND SIGNATURE OF CONTRACTOR </div> | | | |

| | | |
|---|--|------|
| SECTION II - APPROVAL ACTION | | |
| ENCLOSURES RETURNED <i>(List by Item No.)</i> | NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY | DATE |
| | | |

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

| | | | | | |
|---|----|--|----|----|---|
| A | -- | Approved as submitted. | E | -- | Disapproved (See attached). |
| B | -- | Approved, except as noted on drawings. | F | -- | Receipt acknowledged. |
| C | -- | Approved, except as noted on drawings. Refer to attached sheet resubmission required. | FX | -- | Receipt acknowledged, does not comply as noted with contract requirements. |
| D | -- | Will be returned by separate correspondence. | G | -- | Other (<i>Specify</i>) |

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

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SECTION 01351

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02/99

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SECTION 01351

SAFETY, HEALTH, AND EMERGENCY RESPONSE
02/99

PART 1 GENERAL

1.1 REFERENCES

Health and safety requirements in this specification section apply to workers performing tasks involving sampling prior to construction work and to construction workers disturbing soil and having contact with potentially contaminated soil and groundwater. See Specification Section 01450 CHEMICAL DATA QUALITY CONTROL for a description of the pre-construction sampling effort associated with this work. Analytical results from these samples shall be used to evaluate the health and safety protocols planned for the construction work and determine if revisions are necessary. Any requested revisions to the Site Safety and Health Plan shall be submitted in writing. Previous soil and groundwater sampling in the area of work has indicated the presence of explosive and metal contamination, primarily close to buildings in the Line 3A area. For health and safety requirements for activities not involving contact with potentially contaminated soil or groundwater, see Section 01400 SPECIAL SAFETY REQUIREMENTS of this specification package.

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)

| | |
|------------------------|---|
| ACGIH Threshold Limits | (1998) Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices |
|------------------------|---|

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

| | |
|-------------|---|
| ANSI Z358.1 | (1990) Emergency Eyewash and Shower Equipment |
|-------------|---|

CODE OF FEDERAL REGULATIONS (CFR)

| | |
|-------------|--|
| 29 CFR 1910 | Occupational Safety and Health Standards |
| 29 CFR 1926 | Safety and Health Regulations for Construction |

ENGINEERING MANUALS (EM)

| | |
|------------|---|
| EM 385-1-1 | (1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual |
|------------|---|

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Pub No. 85-115

(1985) Occupational Safety and Health
Guidance Manual for Hazardous Waste Site
Activities

1.2 DESCRIPTION OF WORK

This section provides additional requirements for implementing the accident prevention provisions of EM 385-1-1, and specifies a Site Safety and Health Plan (SSHP) which shall be an appendix to the Accident Prevention Plan (APP) as required by EM 385-1-1. The SSHP shall address all activities involving contact with soil and groundwater for areas that may contain metals and explosives contamination.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-06 Test Reports

Monitoring/Sampling Results; .

Personnel exposure monitoring/sampling results.

Site Control Log; .

Record of each entry and exit into the site, as specified.

1.4 REGULATORY REQUIREMENTS

Work performed under this contract shall comply with EM 385-1-1, applicable Federal, state, and local safety and occupational health laws and regulations. This includes, but is not limited to, Occupational Safety and Health Administration (OSHA) standards, 29 CFR 1910, especially Section .120, "Hazardous Waste Site Operations and Emergency Response" and 29 CFR 1926, especially Section .65, "Hazardous Waste Site Operations and Emergency Response". Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.5 PRECONSTRUCTION SAFETY CONFERENCE

A conference shall be scheduled prior to the beginning of sampling work at which time representatives of the Contracting Officer will review and discuss requirements relative to planning and administration of the overall safety program.

1.6 SAFETY AND HEALTH PROGRAM

OSHA Standards 29 CFR 1910, Section .120 (b) and 29 CFR 1926, Section .65 (b) require employers to develop and implement a written Safety and Health

Program for employees involved in hazardous waste operations. The site-specific program requirements of the OSHA Standards shall be integrated into one site-specific document, the Site Safety and Health Plan (SSHP). The SSHP shall interface with the employer's overall Safety and Health Program. Any portions of the overall Safety and Health Program that are referenced in the SSHP (e.g., Respirator Program, Hazard Communication Program, etc.) shall be included as appendices to the SSHP.

1.7 SITE SAFETY AND HEALTH PLAN

1.7.1 Preparation and Implementation

A Site Safety and Health Plan (SSHP) shall be prepared covering onsite work to be performed by the Contractor and all subcontractors. The Safety and Health Manager shall be responsible for the development, implementation and oversight of the SSHP. The SSHP shall establish, in detail, the protocols necessary for the anticipation, recognition, evaluation, and control of hazards associated with each task performed. The SSHP shall address site-specific safety and health requirements and procedures based upon site-specific conditions. The level of detail provided in the SSHP shall be tailored to the type of work, complexity of operations to be performed, and hazards anticipated. Details about some activities may not be available when the initial SSHP is prepared and submitted. Therefore, the SSHP shall address, in as much detail as possible, anticipated tasks, their related hazards and anticipated control measures. Additional details shall be included in the activity hazard analyses as described in paragraph ACTIVITY HAZARD ANALYSES.

1.7.2 Acceptance and Modifications

Prior to submittal, the SSHP shall be signed and dated by the Safety and Health Manager and the Site Superintendent. The SSHP shall be submitted for review 30 days prior to the Preconstruction Safety Conference. Deficiencies in the SSHP will be discussed at the preconstruction safety conference, and the SSHP shall be revised to correct the deficiencies and resubmitted for acceptance. Onsite work shall not begin until the plan has been accepted. A copy of the written SSHP shall be maintained onsite. As work proceeds, the SSHP shall be adapted to new situations and new conditions. Changes and modifications to the accepted SSHP shall be made with the knowledge and concurrence of the Safety and Health Manager, the Site Superintendent, and the Contracting Officer. Should any unforeseen hazard become evident during the performance of the work, the Site Safety and Health Officer (SSHO) shall bring such hazard to the attention of the Safety and Health Manager, the Site Superintendent, and the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, necessary action shall be taken to re-establish and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment. Disregard for the provisions of this specification or the accepted SSHP shall be cause for stopping of work until the matter has been rectified.

1.7.3 Availability

The SSHP shall be made available in accordance with 29 CFR 1910, Section .120 (b)(1)(v) and 29 CFR 1926, Section .65 (b)(1)(v).

1.7.4 Elements

Topics required by 29 CFR 1910, Section .120 (b)(4) 29 CFR 1926, Section

.65 (b)(4) and the Accident Prevention Plan as described in Appendix A of EM 385-1-1 and those described in this section shall be addressed in the SSHP. Where the use of a specific topic is not applicable to the project, the SSHP shall include a statement to justify its omission or reduced level of detail and establish that adequate consideration was given the topic.

1.8 SITE DESCRIPTION AND CONTAMINATION CHARACTERIZATION

1.8.1 Project/Site Conditions

The following information is provided to assist in preparing the SSHP. See also Section 01450 CHEMICAL DATA QUALITY CONTROL for information.

1.8.1.1 Site Information

Soil and groundwater in the areas where construction work is planned may be contaminated with metals and/or explosives. Sampling and analysis is intended to supplement existing information so that construction work can be conducted safely.

1.8.1.2 Not Used

1.8.2 Plan Requirements

The SSHP shall include a site description and contamination characterization section that addresses the following elements:

a. Description of site location, topography, size and past uses of the site.

b. A list of contaminants which may present occupational health and safety hazards. This list shall be created by researching sources of information from past site investigation activities. Chemical names, concentration ranges, media in which found, locations onsite, and estimated quantities/volumes to be impacted by site work shall be included if known.

The contamination characterization shall be reviewed and revised if new chemicals are identified as work progresses.

1.8.3 Not Used

1.9 HAZARD/RISK ANALYSIS

The SSHP shall include a safety and health hazard/risk analysis for each site task and operation to be performed. The hazard/risk analysis shall provide information necessary for determining safety and health procedures, equipment, and training to protect onsite personnel, the environment, and the public. Available site information shall be reviewed when preparing the "Hazard/Risk Analysis" section of the SSHP. The following elements, at a minimum, shall be addressed.

1.9.1 Site Tasks and Operations (Workplan)

The SSHP shall include a comprehensive section that addresses the tasks and objectives of the site operations and the logistics and resources required to reach those tasks and objectives. Based on the type of remediation required, the following is a list of anticipated major site tasks and operations to be performed:

- a. mobilization
- b. sampling
- c. horizontal directional drilling
- d. jacking and boring
- e. excavation/trenching
- f. equipment decontamination
- g. demobilization

This is not a complete list of site tasks and operations; therefore, it shall be expanded and/or revised, during preparation of the SSHP as necessary.

1.9.2 Hazards

The following potential hazards may be encountered during site work. These are not complete lists; therefore, they shall be expanded and/or revised as necessary during preparation of the SSHP.

1.9.2.1 Safety Hazards

- a. Lifting heavy objects;
- b. Speeding and improperly operated vehicles;
- c. Moving equipment;
- d. Slippery and unstable surfaces, steep grades, uneven terrain.

1.9.2.2 Chemical Hazards

Potential chemical hazards that may be encountered during site work are discussed in paragraph SITE DESCRIPTION AND CONTAMINATION CHARACTERIZATION.

The Hazard/Risk Analysis section of the SSHP shall describe the chemical, physical, and toxicological properties of contaminants, sources and pathways of employee exposures, anticipated onsite and offsite exposure level potentials, and regulatory (including Federal, state, and local) or recommended protective exposure standards. The SSHP shall also address employee exposure to hazardous substances brought onsite, and shall comply with the requirements of 29 CFR 1910, Section .1200 and 29 CFR 1926, Section .59, Hazard Communication.

1.9.2.3 Physical Agents

- a. Noise;
- b. Buried utility lines and energized overhead and underground power lines;
- c. Heat stress;
- d. Cold exposure

1.9.2.4 Not Used

1.9.2.5 Biological Hazards

- a. Ticks
- b. Poisonous plants
- c. Biting or stinging insects or spiders.

1.9.3 Action Levels

1.9.3.1 General Requirements

Action levels shall be established for the situations listed below, at a minimum. The action levels and required actions (engineering controls, changes in PPE, etc.) shall be presented in the SSHP in both text and tabular form.

- a. Implementation of engineering controls and work practices.
- b. Upgrade or downgrade in level of personal protective equipment.
- c. Work stoppage and/or emergency evacuation of onsite personnel.
- d. Prevention and/or minimization of public exposures to hazards created by site activities.

1.9.3.2 Confined Space Entry

Entry into and work in a confined space will not be allowed when oxygen readings are less than 19.5% or greater than 23.5% or if the Lower Flammable Limit (LFL) reading is greater than 10%, unless these conditions are adequately addressed in the confined space entry program. In addition, action levels for toxic atmospheres shall be determined.

1.10 ACTIVITY HAZARD ANALYSES

Prior to beginning each major phase of work, an Activity Hazard Analysis shall be prepared by the Contractor performing that work and submitted for review and acceptance. The format shall be in accordance with EM 385-1-1, figure 1-1. A major phase of work is defined as an operation involving a type of work presenting hazards not experienced in previous operations or where a new subcontractor or work crew is to perform. The analysis shall define the activities to be performed and identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the activity hazard analysis has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the government onsite representatives. The activity hazard analyses shall be continuously reviewed and when appropriate modified to address changing site conditions or operations, with the concurrence of the Safety and Health Manager, the Site Superintendent, and the Contracting Officer. Activity hazard analyses shall be attached to and become a part of the SSHP.

1.11 STAFF ORGANIZATION, QUALIFICATIONS, AND RESPONSIBILITIES

An organizational structure shall be developed that sets forth lines of authority (chain of command), responsibilities, and communication procedures concerning site safety, health, and emergency response. This organizational structure shall cover management, supervisors and employees of the Contractor and subcontractors. The structure shall include the means for coordinating and controlling work activities of subcontractors and suppliers. The SSHP shall include a description of this organizational structure as well as qualifications and responsibilities of each of the following individuals. The Contractor shall obtain Contracting Officer's acceptance before replacing any member of the Safety and Health Staff. Requests shall include the names, qualifications, duties, and

responsibilities of each proposed replacement.

1.11.1 Site Superintendent

A Site Superintendent, who has responsibility to implement the SSHP, the authority to direct work performed under this contract and verify compliance, shall be designated.

1.11.2 Safety and Health Manager

1.11.2.1 Qualifications

The services of an Industrial Hygienist certified by the American Board of Industrial Hygiene or a safety professional certified by the Board of Certified Safety Professionals shall be utilized. The name, qualifications (education summary and documentation, ABIH or BCSP certificate), and work experience summary shall be included in the SSHP. The Safety and Health Manager shall have the following additional qualifications:

- a. A minimum of 3 years experience in developing and implementing safety and health programs at hazardous waste sites.
- b. Documented experience in supervising professional and technician level personnel.
- c. Documented experience in developing worker exposure assessment programs and air monitoring programs and techniques.
- d. Documented experience in the development of personal protective equipment programs, including programs for working in and around potentially toxic, flammable and combustible atmospheres and confined spaces.
- e. Working knowledge of state and Federal occupational safety and health regulations.

1.11.2.2 Responsibilities

The Safety and Health Manager shall:

- a. Be responsible for the development, implementation, oversight, and enforcement of the SSHP.
- b. Sign and date the SSHP prior to submittal.
- c. Visit the site as needed for the duration of activities, to audit the effectiveness of the SSHP.
- d. Be available for emergencies.
- e. Provide onsite consultation as needed to ensure the SSHP is fully implemented.
- f. Coordinate any modifications to the SSHP with the Site Superintendent, the SSHO, and the Contracting Officer.
- g. Provide continued support for upgrading/downgrading of the level of personal protection.

h. Be responsible for evaluating air monitoring data and recommending changes to engineering controls, work practices, and PPE.

i. Review accident reports and results of daily inspections.

j. Serve as a member of the Contractor's quality control staff.

1.11.3 Site Safety and Health Officer (SSHO)

1.11.3.1 Qualifications of SSHO

An individual and one alternate shall be designated the Site Safety and Health Officer (SSHO). The name, qualifications (education and training summary and documentation), and work experience of the Site Safety and Health Officer and alternate shall be included in the SSHP. The SSHO shall have the following qualifications:

a. A minimum of 2 years experience in implementing safety and health programs at hazardous waste sites where Level C personal protective equipment was required.

b. Documented experience in construction techniques and construction safety procedures.

c. Working knowledge of Federal and state occupational safety and health regulations.

d. Specific training in personal and respiratory protective equipment program implementation, confined space program oversight, and in the proper use of air monitoring instruments, and air sampling methods.

1.11.3.2 Responsibilities of SSHO

The Site Safety and Health Officer shall:

a. Assist and represent the Safety and Health Manager in onsite training and the day to day onsite implementation and enforcement of the accepted SSHP.

b. Be assigned to the site on a full time basis for the duration of field activities.

c. Have authority to ensure site compliance with specified safety and health requirements, Federal, state and OSHA regulations and all aspects of the SSHP including, but not limited to, activity hazard analyses, air monitoring, use of PPE, decontamination, site control, standard operating procedures used to minimize hazards, safe use of engineering controls, the emergency response plan, confined space entry procedures, spill containment program, and preparation of records by performing a daily safety and health inspection and documenting results on the Daily Safety Inspection Log.

d. Have authority to stop work if unacceptable health or safety conditions exist, and take necessary action to re-establish and maintain safe working conditions.

e. Consult with and coordinate any modifications to the SSHP with the Safety and Health Manager, the Site Superintendent, and the Contracting Officer.

f. Serve as a member of the Contractor's quality control staff on matters relating to safety and health.

g. Conduct accident investigations and prepare accident reports.

h. Review results of daily quality control inspections and document safety and health findings into the Daily Safety Inspection Log.

i. In coordination with site management and the Safety and Health Manager, recommend corrective actions for identified deficiencies and oversee the corrective actions.

1.11.4 Occupational Physician (OP)

1.11.4.1 Qualifications of OP

The services of a licensed physician, who is certified in occupational medicine by the American Board of Preventative Medicine, or who, by necessary training and experience is Board eligible, shall be utilized. The physician shall be familiar with this site's hazards and the scope of this project. The medical consultant's name shall be included in the SSHP.

1.11.4.2 Responsibilities of OP

The physician shall be responsible for the determination of medical surveillance protocols and for review of examination/test results performed in compliance with 29 CFR 1910, Section .120 (f) and 29 CFR 1926, Section .65 (f) and paragraph MEDICAL SURVEILLANCE. The OP is not required to visit the site.

1.11.5 Persons Certified in First Aid and CPR

At least two persons who are currently certified in first aid and CPR by the American Red Cross or other approved agency shall be onsite at all times during site operations. They shall be trained in universal precautions and the use of PPE as described in the Bloodborne Pathogens Standard of 29 CFR 1910, Section .1030. These persons may perform other duties but shall be immediately available to render first aid when needed.

1.12 TRAINING

Personnel shall receive training in accordance with the Contractor's written safety and health training program and 29 CFR 1910 Section .120, 29 CFR 1926 Section .65, and 29 CFR 1926 Section .21. The SSHP shall include a section describing training requirements.

1.12.1 General Hazardous Waste Operations Training

Personnel entering the exclusion or contamination reduction zones shall have successfully completed 40 hours of hazardous waste instruction off the site; 3 days actual field experience under the direct supervision of a trained, experienced supervisor; and 8 hours refresher training annually. Onsite supervisors shall have completed the above training and 8 hours of additional, specialized training covering at least the following topics: the employer's safety and health program, personal protective equipment program, spill containment program, and health hazard monitoring procedures and techniques. Copies of current training certification statements shall be submitted prior to initial entry onto the work site.

1.12.2 Site-specific Training

Site-specific training sessions shall be documented in accordance with Section 01.B.03.b of EM 385-1-1.

1.12.2.1 Initial Session (Pre-entry Briefing)

Prior to commencement of onsite field activities, all site employees, including those assigned only to the Support Zone, shall attend a site-specific safety and health training session. This session shall be conducted by the Safety and Health Manager and/or the Site Safety and Health Officer to ensure that all personnel are familiar with requirements and responsibilities for maintaining a safe and healthful work environment.

Procedures and contents of the accepted SSHP and Sections 01.B.02 and 28.D.03 of EM 385-1-1 shall be thoroughly discussed. The Contracting Officer shall be notified at least 5 days prior to the initial site-specific training session so government personnel involved in the project may attend.

1.12.2.2 Periodic Sessions

Periodic onsite training (tailgate safety meetings) shall be conducted by the SSHO at least daily for personnel assigned to work at the site during the following day. The training shall address safety and health procedures, work practices, any changes in the SSHP, activity hazard analyses, work tasks, or schedule; results of previous week's air monitoring, review of safety discrepancies and accidents. Should an operational change affecting onsite field work be made, a meeting prior to implementation of the change shall be convened to explain safety and health procedures. Site-specific training sessions for new personnel, visitors, and suppliers shall be conducted by the SSHO using the training curriculum outlines developed by the Safety and Health Manager.

1.12.2.3 Not Used

1.13 PERSONAL PROTECTIVE EQUIPMENT

1.13.1 PPE Program

In accordance with 29 CFR 1910 Section .120 (g)(5) and 29 CFR 1926Section .65 (g)(5), a written Personal Protective Equipment (PPE) program which addresses the elements listed in that regulation, and which complies with respiratory protection program requirements of 29 CFR 1910 Section .134, is to be included in the employer's Safety and Health Program. The Site Safety and Health Plan shall detail the minimum PPE ensembles (including respirators) and specific materials from which the PPE components are constructed for each site-specific task and operation to be performed, based upon the hazard/risk analysis. Components of levels of protection (B, C, D and modifications) must be relevant to site-specific conditions, including heat and cold stress potential and safety hazards. Only respirators approved by NIOSH shall be used. Onsite personnel shall be provided with appropriate personal protective equipment. Protective equipment and clothing shall be kept clean and well maintained. The PPE section of the SSHP shall include site-specific procedures to determine PPE program effectiveness and for onsite fit-testing of respirators, cleaning, maintenance, inspection, and storage of PPE.

1.13.2 Levels of Protection

The Safety and Health Manager shall establish appropriate levels of protection for each work activity based on review of historical site information, existing data, an evaluation of the potential for exposure (inhalation, dermal, ingestion, and injection) during each task, past air monitoring results, and a continuing safety and health monitoring program. The Safety and Health Manager shall also establish action levels for upgrade or downgrade in levels of PPE from the following specified minimum levels of protection. Protocols and the communication network for changing the level of protection shall be described in the SSHP. The PPE reassessment protocol shall address air monitoring results, potential for exposure, changes in site conditions, work phases, job tasks, weather, temperature extremes, individual medical considerations, etc.

1.13.2.1 Components of Levels of Protection

The following items constitute minimum protective clothing and equipment ensembles to be utilized during this project:

Level D.

- Appropriate work clothing
- Steel-toed work boots
- Hearing protection (if appropriate for task)
- Hard hat
- Gloves appropriate to protect against task-specific hazards
- Safety glasses or goggles

Modified Level D.

- Appropriate work clothing
- Steel-toed work boots
- Hearing protection (if appropriate for task)
- Hard hat
- Gloves (appropriate to protect against task-specific chemical and physical hazards)
- Regular or coated tyvek coveralls with hoods and elastic wrists and ankles
- Safety glasses or goggles

Level C.

- Air purifying respirator with combination cartridges
- Hard hat
- Uncoated, chemically resistant coveralls
- Gloves (outer): disposable, chemically resistant
- Gloves (inner): disposable cotton
- Boots: chemically resistant boots or boot covers, steel toe and shank
- Hearing protection (if appropriate for task)

1.13.2.2 Initial Minimum Levels of PPE by Task

Based on available information, the initial minimum protective equipment requirements for each major task and operation are listed below. Available site information shall be reviewed and the list of tasks and operations and these levels of protection shall be expanded and/or revised during preparation of the SSHP.

MINIMUM PROTECTIVE EQUIPMENT REQUIREMENTS

| TASK/OPERATION | INITIAL LEVEL OF PROTECTION |
|---------------------------------|-----------------------------|
| Mobilization | Level D |
| Sampling | Level D/Modified Level D |
| Horizontal directional drilling | Level D/Modified Level D |
| Jacking and boring | Modified Level D |
| Excavation/trenching | Modified Level D |
| Equipment decontamination | Modified Level D |
| Demobilization | Level D |

1.13.3 PPE for Government Personnel

Three clean sets of personal protective equipment and clothing (excluding air-purifying negative-pressure respirators and safety shoes, which will be provided by individual visitors), as required for entry into the Exclusion Zone and/or Contamination Reduction Zone, shall be available for use by the Contracting Officer or official visitors. The items shall be cleaned and maintained by the Contractor and stored in a clean area and clearly marked:

"FOR USE BY GOVERNMENT ONLY." The Contractor shall provide basic training in the use and limitations of the PPE provided, and institute administrative controls to check prerequisites prior to issuance. Such prerequisites include meeting minimum training requirements for the work tasks to be performed and medical clearance for site hazards and respirator use.

1.14 MEDICAL SURVEILLANCE

The Safety and Health Manager, in conjunction with the Occupational Physician, shall detail, in the employer's Safety and Health Program and the SSHP, the medical surveillance program that includes scheduling of examinations, certification of fitness for duty, compliance with OSHA requirements, and information provided to the physician. Examinations shall be performed by or under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine, and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place. Medical surveillance protocols and examination and test results shall be reviewed by the Occupational Physician. Personnel working in contaminated areas of the site shall have been examined as prescribed in 29 CFR 1910 Section .120, and 29 CFR 1926 Section .65, and determined medically fit to perform their duties. Documentation of medical exams shall be provided as part of the Certificate of Worker or visitor Acknowledgement. Medical records shall be maintained in accordance with 29 CFR 1910 Section .120 and 29 CFR 1926 Section .65.

1.15 NOT USED

1.16 EXPOSURE MONITORING/AIR SAMPLING PROGRAM

The Safety and Health Manager shall prepare and implement an exposure monitoring/air sampling program to identify and quantify safety and health hazards and airborne levels of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment for affected site personnel. Available site information shall be reviewed and the exposure monitoring/air sampling program shall be expanded and/or revised for submittal as part of the SSHP.

The exposure monitoring program for the site shall be detailed in the SSHP.

1.17 HEAT AND COLD STRESS MONITORING

The Safety and Health Manager shall develop a heat stress and cold stress monitoring program for onsite activities. Details of the monitoring program, including schedules for work and rest, and physiological monitoring requirements, shall be described in the SSHP. Personnel shall be trained to recognize the symptoms of heat and cold stress. The SSHP and an alternate person shall be designated, in writing, to be responsible for the heat and cold stress monitoring program.

1.17.1 Heat Stress

Physiological monitoring shall commence when the ambient temperature is above 21.1 degrees C. Monitoring frequency shall increase as the ambient temperature increases or as slow recovery rates are observed. An adequate supply of cool drinking water shall be provided for the workers. NIOSH Pub No. 85-115 may be consulted for guidance in determining protocols for prevention of heat stress.

1.17.2 Cold Stress

To guard against cold injury, appropriate clothing and warm shelter for rest periods shall be provided. Procedures to monitor and avoid cold stress shall be followed in accordance with the current TLVs for Cold Stress as recommended in ACGIH Threshold Limits.

1.18 SAFETY PROCEDURES, ENGINEERING CONTROLS AND WORK PRACTICES

The SSHP shall describe the standard operating safety procedures, engineering controls and safe work practices to be implemented for the work covered. These shall include, but not be limited to, the following:

1.18.1 General Site Rules/Prohibitions

General site rules/prohibitions (buddy system, eating, drinking, and smoking restrictions, etc.).

1.18.2 Work Permit Requirements

Confined space, in accordance with the requirements of 29 CFR 1910.146 (if appropriate to the task).

1.18.3 Material Handling Procedures

Soils and liquids. Procedures for minimization of dust.

1.18.3.1 Spill and Discharge Control

Written spill and discharge containment/control procedures shall be developed and implemented. These procedures shall address material handling equipment, and appropriate procedures for drum and container handling, opening, sampling, shipping and transport. These procedures shall describe prevention measures, such as building berms or dikes; spill control measures and material to be used (e.g. booms, vermiculite); location of the spill control material; personal protective equipment required to cleanup spills; disposal of contaminated material; and who is responsible to report the spill. Storage of contaminated material or

hazardous materials shall be appropriately bermed, diked and/or contained to prevent any spillage of material on uncontaminated soil. If the spill or discharge is reportable, and/or human health or the environment are threatened, the National Response Center, the state, and the Contracting Officer shall be notified as soon as possible.

1.18.3.2 Not Used

1.18.4 Drum and Container Handling

Procedures and Precautions (opening, sampling, overpacking).

1.18.5 Confined Space Entry Procedures

1.18.6 Not Used

1.18.7 Not Used

1.18.8 Fire Protection and Prevention

Comply with all applicable provisions of 29 CFR 1926 Subpart F.

1.18.9 Electrical Safety

If temporary electrical power is used for this project, it shall conform to the National Electrical Code and EM 385-1-1. Motorized vehicles to be used on this project shall conform to EM 385-1-1. All portable electrical equipment shall be protected by Ground Fault Circuit Interrupters (GFCI). Clearances to adjacent overhead transmission and distribution electrical lines shall be sufficient for the movement of vehicles and operation of construction equipment.

1.18.10 Excavation and Trench Safety

Comply with applicable provisions of 29 CFR 1926.650-652 and Section 25 of EM 385-1-1.

1.18.11 Guarding of Machinery and Equipment

1.18.12 Lockout/Tagout

The Contractor shall comply with all applicable requirements of 29 CFR Part 1910.147, 29 CFR Part 1910.301-305, and EM 385-1-1, Section 12, at a minimum.

1.18.13 Not Used

1.18.14 Hazard Communication

A hazard communication program shall be established and implemented in accordance with 29 CFR 1926.59. This shall include the development of a written Hazard Communication Plan which shall be included as part of the SSHP and kept on site, as required by 29 CFR 1926.59(e)(1).

1.18.15 Illumination

The Contractor shall comply with the requirements of 29 CFR 1926.26.

1.18.16 Sanitation

The Contractor shall provide washing facilities in the support zone consisting of water, towels, and soap for men and women as necessary (see also paragraph: PERSONAL HYGIENE AND DECONTAMINATION of this section). Potable water for drinking shall be provided in the support zone. Drinking cups shall be kept in sanitary receptacles.

1.18.17 Engineering Controls

The Contractor shall implement feasible engineering and work practice controls to reduce and maintain employee exposure at or below the OSHA PELs and ACGIH TLVs (the more restrictive shall apply) for hazardous substances that may be encountered.

1.18.18 Process Safety Management

1.18.19 Signs and Labels

Before site operations begin, mark the perimeter with warning tape or other visual means.

1.18.20 Waste Disposal

Waste shall be handled, transported, and disposed in accordance with all Federal, state, and local regulations. Provide detailed information regarding waste disposal procedures in the SSHP.

1.19 SITE CONTROL MEASURES

In order to prevent the spread of contamination and control the flow of personnel, vehicles, and materials into and out of work areas, site control measures shall be established and described in the SSHP. The SSHP shall describe the methodology to be used by the Safety and Health Manager and SSHO in determining work zone designations and their modifications, and procedures to limit the spread of contamination. The SSHP shall include procedures for the implementation and enforcement of safety and health rules for all persons on the site, including employers, employees, outside Contractors, government representatives, and visitors.

1.19.1 Work Zones

Work zone boundaries (exclusion zone, including restricted and regulated areas; contamination reduction zone; and support zone) and access points shall be indicated in the SSHP. Delineation of work zone boundaries shall be based on the contamination characterization data and the hazard/risk analysis to be performed as described in paragraph: HAZARD/RISK ANALYSIS. As work progresses and field conditions are monitored, work zone boundaries may be modified with approval of the Contracting Officer. Work zones shall be clearly identified and marked in the field (using fences, tape, signs, etc.). Work zones shall consist of the following:

a. Exclusion Zone (EZ): The exclusion zone is the area where hazardous contamination is either known or expected to occur and the greatest potential for exposure exists. Entry into this area shall be controlled and exit may only be made through the CRZ.

b. Contamination Reduction Zone (CRZ): The CRZ is the transition

area between the Exclusion Zone and the Support Zone. The personnel and equipment decontamination areas shall be separate and unique areas located in the CRZ.

c. Support Zone (SZ): The Support Zone is defined as areas of the site, other than exclusion zones and contamination reduction zones, where workers do not have the potential to be exposed to hazardous substances or dangerous conditions resulting from hazardous waste operations. The Support Zone shall be secured against active or passive contamination. Site offices, parking areas, and other support facilities shall be located in the Support Zone.

1.19.2 Site Control Log

A log of personnel visiting, entering, or working on the site shall be maintained. The log shall include the following: date, name, agency or company, time entering and exiting site, time entering and exiting the exclusion zone (if applicable), and personal protective equipment utilized.

Before visitors are allowed to enter the Contamination Reduction Zone or Exclusion Zone, they shall show proof of current training, medical surveillance and respirator fit testing (if respirators are required for the tasks to be performed) and shall fill out the Certificate of Worker or Visitor Acknowledgment. This visitor information, including date, shall be recorded in the log.

1.19.3 Communication

An employee alarm system that has adequate means of on and off site communication shall be provided and installed in accordance with 29 CFR 1910

Section .165. The means of communication shall be able to be perceived above ambient noise or light levels by employees in the affected portions of the workplace. The signals shall be distinctive and recognizable as messages to evacuate or to perform critical operations. Describe all means of field communication in the SSHP.

1.19.4 Site Security

Signs shall be printed in bold large letters on contrasting backgrounds in English and/or where appropriate, in the predominant language of workers unable to read English. Signs shall be visible from all points where entry might occur and at such distances from the restricted area that employees may read the signs and take necessary protective steps before entering. Ensure employees use designated access points.

1.20 PERSONAL HYGIENE AND DECONTAMINATION

Personnel entering the Exclusion or Contamination Reduction Zones or otherwise exposed or subject to exposure to hazardous chemical vapors, liquids, or contaminated solids shall adhere to the following personal hygiene and decontamination provisions. Decontamination shall be performed in the CRZ prior to entering the Support Zone from the Exclusion Zone. Chapter 10.0 of NIOSH Pub No. 85-115 shall be consulted when preparing decontamination procedures. A detailed discussion of personal hygiene and decontamination facilities and procedures to be followed by site workers shall be submitted as part of the SSHP. Employees shall be trained in the procedures and the procedures shall be enforced throughout site operations.

Persons disregarding these provisions of the SSHP shall be barred from the site.

1.20.1 Decontamination Facilities

A personnel decontamination facility shall be provided in the CRZ. This facility shall be used by both Contractor personnel and government representatives.

1.20.2 Procedures

Available site information shall be reviewed and these procedures shall be expanded and/or revised for submittal as part of the SSHP.

1.21 EQUIPMENT DECONTAMINATION

Vehicles and equipment used in the EZ shall be decontaminated in the CRZ prior to leaving the site. The procedures for decontamination of vehicles and equipment shall be addressed in the SSHP.

1.21.1 Decontamination Facilities

A vehicle/equipment decontamination station shall be provided within the CRZ for decontaminating vehicles and equipment leaving the EZ. The equipment decontamination area shall be proposed in the Contractor's SSHP. Include information concerning the surface to be used to protect the ground from contamination, any collection system for decontamination waste, and methods to be used to decontaminate the equipment. A designated "clean area" shall also be identified in the CRZ for performing equipment maintenance. This area shall be used when personnel are required by normal practices to come in contact with the ground, i.e., crawling under a vehicle to change engine oil. Equipment within the EZ or CRZ shall be decontaminated before maintenance is performed.

1.21.2 Procedures

Procedures for equipment decontamination shall be developed and utilized to prevent the spread of contamination into the SZ and offsite areas. These procedures shall address disposal of contaminated products and spent materials used on the site, including containers, fluids, oils, etc. Any item taken into the EZ shall be assumed to be contaminated and shall be inspected and/or decontaminated before the item leaves the area. Vehicles, equipment, and materials shall be cleaned and decontaminated prior to leaving the site. Construction material shall be handled in such a way as to minimize the potential for contaminants being spread and/or carried offsite. Prior to exiting the site, vehicles and equipment shall be monitored to ensure the adequacy of decontamination.

1.22 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

The SSHP shall describe the emergency and first aid equipment to be available onsite. The following items, as a minimum, shall be maintained onsite and available for immediate use:

- a. First aid equipment and supplies approved by the consulting physician.
- b. Emergency eyewashes and showers which comply with ANSI Z358.1.
- c. Emergency-use respirators.
- d. Fire extinguishers with a minimum rating of 20-A:120-B:C shall be

provided at site facilities and in all vehicles and at any other site locations where flammable or combustible materials present a fire risk.

1.23 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

An Emergency Response Plan, that meets the requirements of 29 CFR 1910 Section .120 (1) and 29 CFR 1926 Section .65 (1), shall be developed and implemented as a section of the SSHP. In the event of any emergency associated with remedial action, the Contractor shall, without delay, alert all onsite employees that there is an emergency situation; take action to remove or otherwise minimize the cause of the emergency; alert the Contracting Officer; and institute measures necessary to prevent repetition of the conditions or actions leading to, or resulting in, the emergency. Employees that are required to respond to hazardous emergency situations shall be trained in how to respond to such expected emergencies. The plan shall be rehearsed regularly as part of the overall training program for site operations. The plan shall be reviewed periodically and revised as necessary to reflect new or changing site conditions or information. Copies of the accepted SSHP and revisions shall be provided to the affected local emergency response agencies. The following elements, as a minimum, shall be addressed in the plan:

a. Pre-emergency planning. The local emergency response agencies shall be contacted and met with during preparation of the Emergency Response Plan. Agencies to be contacted include local fire, police, and rescue authorities with jurisdiction and nearby medical facilities that may be utilized for emergency treatment of injured personnel. At these meetings, the agencies shall be notified of upcoming site activities and potential emergency situations. The response agencies' capabilities shall be ascertained and written response commitments obtained. The Contractor shall ensure the Emergency Response Plan for the site is compatible and integrated with the disaster, fire and/or emergency response plans of local, state, and Federal agencies.

b. Personnel roles, lines of authority, communications for emergencies.

c. Emergency recognition and prevention.

d. Site topography, layout, and prevailing weather conditions.

e. Criteria and procedures for site evacuation (emergency alerting procedures, employee alarm system, emergency PPE and equipment, safe distances, places of refuge, evacuation routes, site security and control).

f. Specific procedures for decontamination and medical treatment of injured personnel.

g. Route maps to nearest prenotified medical facility. Site-support vehicles shall be equipped with maps. At the beginning of project operations, drivers of the support vehicles shall become familiar with the emergency route and the travel time required.

h. Emergency alerting and response procedures including posted instructions and a list of names and telephone numbers of emergency contacts (physician, nearby medical facility, fire and police departments, ambulance service, Federal, state, and local environmental agencies; as well as Safety and Health Manager, the Site Superintendent, the Contracting

Officer and/or their alternates).

i. Not used

j. Procedures for reporting incidents to appropriate government agencies. In the event that an incident such as an explosion or fire, or a spill or release of toxic materials occurs during the course of the project, the appropriate government agencies shall be immediately notified.

In addition, the Contracting Officer shall be verbally notified immediately and receive a written notification within 24 hours. The report shall include the following items:

(1) Name, organization, telephone number, and location of the Contractor.

(2) Name and title of the person(s) reporting.

(3) Date and time of the incident.

(4) Location of the incident, i.e., site location, facility name.

(5) Brief summary of the incident giving pertinent details including type of operation ongoing at the time of the incident.

(6) Cause of the incident, if known.

(7) Casualties (fatalities, disabling injuries).

(8) Details of any existing chemical hazard or contamination.

(9) Estimated property damage, if applicable.

(10) Nature of damage, effect on contract schedule.

(11) Action taken to ensure safety and security.

(12) Other damage or injuries sustained, public or private.

k. Procedures for critique of emergency responses and follow-up.

1.24 CERTIFICATE OF WORKER/VISITOR ACKNOWLEDGEMENT

A copy of a Contractor-generated certificate of worker/visitor acknowledgement shall be completed and submitted for each visitor allowed to enter contamination reduction or exclusion zones, and for each employee, following the example certificate at the end of this section.

1.25 INSPECTIONS

The SSHO shall perform daily inspections of the jobsite and the work in progress to ensure compliance with EM 385-1-1, the Safety and Health Program, the SSHP and other occupational health and safety requirements of the contract, and to determine the effectiveness of the SSHP. Procedures for correcting deficiencies (including actions, timetable and responsibilities) shall be described in the SSHP. Follow-up inspections to ensure correction of deficiencies shall be conducted and documented. Daily safety inspection logs shall be used to document the inspections, noting safety and health deficiencies, deficiencies in the effectiveness of the SSHP, and corrective actions taken. The SSHO's Daily Inspection Logs shall

be attached to and submitted with the Daily Quality Control reports. Each entry shall include the following: date, work area checked, employees present in work area, PPE and work equipment being used in each area, special safety and health issues and notes, and signature of preparer. In the event of an accident, the Contracting Officer shall be notified according to EM 385-1-1. Within 2 working days of any reportable accident, an Accident Report shall be completed on ENG Form 3394 and submitted.

1.26 SAFETY AND HEALTH PHASE-OUT REPORT

A Safety and Health Phase-Out Report shall be submitted within 10 working days following completion of the work, prior to final acceptance of the work. The following minimum information shall be included:

- a. Summary of the overall performance of safety and health (accidents or incidents including near misses, unusual events, lessons learned, etc.).

- b. Final decontamination documentation including procedures and techniques used to decontaminate equipment, vehicles, and on site facilities.

- c. Summary of exposure monitoring and air sampling accomplished during the project.

- d. Signatures of Safety and Health Manager and SSHO.

EXAMPLE CERTIFICATE OF WORKER/VISITOR ACKNOWLEDGMENT

PROJECT NAME _____ CONTRACT NO. _____
 PROJECT ADDRESS _____
 CONTRACTOR'S NAME _____
 [EMPLOYEE'S][VISITOR'S] NAME _____

The contract for the above project requires the following: that you be provided with and complete formal and site-specific training; that you be supplied with proper personal protective equipment including respirators; that you be trained in its use; and that you receive a medical examination to evaluate your physical capacity to perform your assigned work tasks, under the environmental conditions expected, while wearing the required personal protective equipment. These things are to be done at no cost to you. By signing this certification, you are acknowledging that your employer has met these obligations to you.

I HAVE READ, UNDERSTAND AND AGREE TO FOLLOW THE SITE SAFETY AND HEALTH PLAN FOR THIS SITE.

Name _____ Date _____

FORMAL TRAINING: I have completed the following formal training courses that meet OSHA's requirements:

Date Completed

40 hour:
 8 hour supervisory:.....
 8 hour refresher:.....

SITE-SPECIFIC TRAINING: I have been provided and have completed the site-specific training required by this Contract. The Site Safety and Health Officer conducted the training. _____

RESPIRATORY PROTECTION: I have been trained in accordance with the criteria in [the Contractor's] [my Employer's] Respiratory Protection program. I have been trained in the proper work procedures and use and limitations of the respirator(s) I will wear. I have been trained in and will abide by the facial hair policy. _____

RESPIRATOR FIT-TEST TRAINING: I have been trained in the proper selection, fit, use, care, cleaning, and maintenance, and storage of the respirator(s) that I will wear. I have been fit-tested in accordance with the criteria in [the Contractor's] [my employer's] Respiratory Program and have received a satisfactory fit. [I have been assigned my individual respirator.] I have been taught how to properly perform positive and negative pressure fit-check upon donning negative pressure respirators each time. _____

MEDICAL EXAMINATION: I have had a medical examination within the last twelve months which was paid for by my employer. The examination included: health history, pulmonary function tests and may have included an evaluation of a chest ax-ray. A physician made determination regarding my physical capacity to perform work tasks on the project while wearing protective equipment including a respirator. I was personally provided a copy and informed of the results of that examination. My employer's industrial hygienist evaluated the medical certification provided by the physician and checked the appropriate blank below. The physician determined that there:

were no limitations to performing the required work tasks;

were identified physical limitations to performing the required work tasks.

Date medical exam completed _____

[Employee's][Visitor's] Signature _____
Date _____

Printed Name _____

Social Security Number _____

Contractor's Site Safety and Health Officer Signature _____

Date _____

Printed Name _____

Social Security Number _____

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

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SECTION 01355

ENVIRONMENTAL PROTECTION
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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. ARMY (DA)

AR 200-5

Pest Management

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328

Definitions

40 CFR 68

Chemical Accident Prevention Provisions

40 CFR 152 - 186

Pesticide Programs

40 CFR 260

Hazardous Waste Management System: General

40 CFR 261

Identification and Listing of Hazardous Waste

40 CFR 262

Standards Applicable to Generators of Hazardous Waste

40 CFR 279

Standards for the Management of Used Oil

40 CFR 302

Designation, Reportable Quantities, and Notification

40 CFR 355

Emergency Planning and Notification

49 CFR 171 - 178

Hazardous Materials Regulations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1

(1996) U.S. Army Corps on Engineers Safety and Health Requirements Manual

WETLAND MANUAL

Corps of Engineers Wetlands Delineation
Manual Technical Report Y-87-1

IOWA AAP SITE SPECIFIC REGULATIONS

Form APNP 1004

Installation Spill Contingency Plan

SWPPP

Storm Water Pollution Prevention Plan

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Installation Pest Management Coordinator

Installation Pest Management Coordinator (IPMC) is the individual officially designated by the Installation Commander to oversee the Installation Pest Management Program and the Installation Pest Management Plan.

1.2.5 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.6 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.7 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.8 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.2.9 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.10 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When

used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G-RE

The environmental protection plan.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained on site by the Contractor.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

- a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.
- b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
- d. Description of the Contractor's environmental protection personnel training program.
- e. An erosion and sediment control plan which identifies the type and

location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan. The Contractor's best management practices shall be in accordance with the Iowa AAP's National Pollutant Discharge Elimination System (NPDES) Storm Water Pollution Prevention Plan (SWPPP) which may be reviewed at the Iowa AAP's Environmental Office. Any temporary measures shall be removed after the area has been stabilized.

f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.

g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

i. Drawing showing the location of borrow areas.

j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1 and the Form APNP 1004 Installation Spill Contingency Plan. This plan shall include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer, Iowa AAP's Fire Department, and Iowa AAP's Environmental Office in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.
2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.
3. Training requirements for Contractor's personnel and methods of accomplishing the training.
4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.
5. The names and locations of suppliers of containment materials

and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.

p. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological,

cultural resources, biological resources and wetlands not previously known to be on site or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.

q. If applicable, a pesticide treatment plan shall be included and updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation specific requirements. The Contractor shall follow AR 200-5 Pest Management, Chapter 2, Section III "Pest Management Records and Reports" for data required to be reported to the Installation.

1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an Appendix, to the Environmental Protection Plan.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any on site construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.9 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.10 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or

regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

3.1.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.1.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.1.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent

erosion and sediment control best management practices (BMPs). BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. Any temporary measures shall be removed after the area has been stabilized.

3.1.4 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.2 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.2.1 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.3 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.3.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.3.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.3.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise.

3.3.4 Burning

Burning shall be prohibited on the Government premises.

3.4 MANAGEMENT AND DISPOSAL OF WASTE AND CHEMICAL MATERIALS

Management and disposal of wastes and chemical materials shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.4.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

3.4.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 150 mm of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.4.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging,

labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations.

The Contractor shall transport Contractor generated hazardous waste off Government property within 60 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer and Iowa AAP Environmental Office.. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

3.4.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. There shall be no storage of fuel on the project site. Fuel must be brought to the project site each day that work is performed.

3.4.5 Waste Water

Disposal of waste water shall be as specified below.

- a. Wastewater generated during construction dewatering, rinsate, and decontamination activities shall be disposed of as follows. The Contractor shall be responsible for the treatment and disposal of all water generated during dewatering, rinsate, and decontamination activities. For purposes of this contract, the Contractor shall assume that the groundwater, rinsate and decontamination water is contaminated with explosives and shall be treated, prior to disposal, with granular activated carbon (GAC). The minimum acceptable empty bed contact time (EBCT) shall be five minutes. The skid mounted GAC treatment unit(s) shall be a new duplex unit (two GAC units.) Any tank/bulk storage requirements and the treatment system flowrate are at the Contractor's discretion, but shall be suitable for the application. No analytical testing shall be required for Contractor dewatering, rinsate, or decontamination. See Section 01400 SPECIAL SAFETY REQUIREMENTS and 01450 CHEMICAL DATA QUALITY CONTROL for additional information/investigations performed at Line 3A Site. The method for disposal of the treated ground water will be by land application within the boundary of the project site in accordance with all Federal, State, Regional and Local laws and regulations. The Contractor shall discharge the water at a rate that allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, defined drainage areas, or discharge into the "waters of the State" shall occur. No discharge permit shall be required for land application of the treated ground water. The method of treatment and discharge process shall be included in the Waste Water Management Plan and shall be submitted in the Environmental Protection Plan.
- b. Wastewater from water generated from the flushing of lines after

disinfection or disinfection in conjunction with hydrostatic testing shall be discharged into the sanitary sewer with prior approval and/or notification to the Waste Water Treatment Plant's Operator; or shall be by land application in accordance with all Federal, State, Regional, and Local laws and regulations. The Contractor shall be responsible for assuring that the water to be land applied shall be free of chemicals contaminates except for chlorine which should be allowed to dissipate prior to discharge.

3.5 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.6 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.7 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.7.1 Indiana Bats (*Myotis sodalis*) and Their Habitat

Indiana Bats (*myotis sodalis*) are a Federal (50 CFR Part 17) and a State (Code of Iowa, Chapter 481B) listed endangered species that occurs in southern Iowa from April through November. Des Moines County is within the known breeding range of the Indiana Bat (*Myotis sodalis*). Iowa AAP is located in Des Moines County and have recordings of the Indiana Bat on the Post. The female Indiana Bats have the their young beneath the loose or peeling bark of trees. The Contractor shall not proceed with clearing, disturbing, or damaging trees larger than 9 inches diameter breast height (dbh) between 1 April and 15 November. If the Contractor must work within close proximity of trees larger than 9 inches dbh between 1 April and 15 November and the Contractor may disturb or damage the trees, the Contractor shall contact the Contracting Officer and the Post Environmental Office to allow for consultation with the US Fish and Wildlife Service prior to work commencing. If trees larger than 9 inches dbh are to be removed between November 15 and April 1 and if the Contractor should observe any bats departing the trees or are killed during the clearing operation, the

Contractor shall immediately stop the clearing operation and shall immediately inform the Contracting Officer and Iowa AAP's Post Environmental Office who will immediately notify the U.S. Fish and Wildlife Service (USFWS). After notification to the Contracting Officer, the Contractor shall not proceed with the clearing operation prior to receiving approval from the Contracting Officer.

3.7.2 Western Worm Snake (*Carphophis amoenus*)

The western worm snake is a State of Iowa Threatened reptile. The USFWS conducted a survey on the Iowa AAP and found the western worm snake along one of the roads near alfalfa fields.

3.7.3 Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is a Federal Threatened specie and a State of Iowa Endangered specie known to have been sited on Iowa AAP.

3.8 INTEGRATED PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, the Contractor, through the Contracting Officer, shall coordinate with the Installation Pest Management Coordinator (IPMC) at the earliest possible time prior to pesticide application. The Contractor shall discuss integrated pest management strategies with the IPMC and receive concurrence from the IPMC through the Contracting Officer prior to the application of any pesticide associated with these specifications. Installation Pest Management personnel shall be given the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.8.1 Pesticide Delivery and Storage

Pesticides shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses. Pesticides shall be stored according to manufacturer's instructions and under lock and key when unattended.

3.8.2 Qualifications

For the application of pesticides, the Contractor shall use the services of a subcontractor whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.8.3 Pesticide Handling Requirements

The Contractor shall formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions and shall use the clothing and personal protective equipment specified on the labeling for use during all phases of the application. Material Safety Data Sheets (MSDS) shall be available for all pesticide products.

3.8.4 Application

Pesticides shall be applied by a State Certified Pesticide Applicator in accordance with EPA label restrictions and recommendation. The Certified

Applicator shall wear clothing and personal protective equipment as specified on the pesticide label. Water used for formulating shall only come from locations designated by the Contracting Officer. The Contractor shall not allow the equipment to overflow. Prior to application of pesticide, all equipment shall be inspected for leaks, clogging, wear, or damage and shall be repaired prior to being used.

3.9 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.10 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.11 MILITARY MUNITIONS

In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260, the Contractor shall immediately stop work in that area and immediately inform the Contracting Officer.

3.12 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.13 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --

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SECTION 01400

SPECIAL SAFETY REQUIREMENTS

05/00

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SECTION 01400

SPECIAL SAFETY REQUIREMENTS
05/00

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1926 Safety and Health Regulations for Construction

ENGINEERING MANUALS (EM)

EM 385-1-1 (1996) Safety and Health Requirements Manual

1.2 SUMMARY

1.2.1 General

This section provides guidelines for preparation of accident prevention plans, and to implement the accident prevention clause (this specification) and EM 385-1-1, Safety and Health Requirements Manual. The U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1 is available from U.S. Government bookstores operated by the Government Printing Office. U.S. Government bookstores are located in most major cities including Milwaukee, Chicago, Kansas City, Denver, and Pueblo, Colorado.

1.2.2 Description of Work

This section applies to health and safety requirements for activities not involving contact with potentially contaminated soil or groundwater.

1.3 PRECONSTRUCTION CONFERENCE

A preconstruction conference will be scheduled prior to beginning of site work at which time representatives of the Contracting Officer will review and discuss requirements relative to planning and administration of the overall safety program.

1.4 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan; G-RE

The written site-specific Accident Prevention Plan.

1.5 ACCIDENT PREVENTION PLAN

The Contractor shall submit, prior to the start of on site construction activity, a proposed accident prevention plan which shall be the accident prevention policy to be followed by all of the Contractor's and subcontractor's personnel and supervisory staff during performance of the work.

1.5.1 Requirements

The proposed plan shall be developed after a careful analysis of the work involved and shall be tailored specifically to the conditions of this project. The Contractor's accident prevention plan shall contain, as a minimum, the following general information or procedures for the activity indicated. The Contractor shall submit his plan for review and acceptance prior to commencing work.

1.5.1.1 Responsible Individual(s)

The Contractor shall designate an onsite employee as the individual responsible for insuring the accident prevention plan is implemented and enforced.

1.5.1.2 Subcontractor Supervision

Explain procedures to assure that subcontractor(s) fully comply with the accident prevention plan.

1.5.1.3 Indoctrination of New Employees

The plan shall include provisions for advising workers of the purpose of the accident prevention plan, specific hazards on the job and precautions to be taken, emergency procedures, information concerning tool box safety meetings, required protective equipment, cleanup rules and location of company safety rules (posting or handout).

1.5.1.4 Tool Box Safety Meetings

Hold weekly "Tool Box" safety meetings. Timely safety subjects shall be determined by a responsible individual. Employees will be informed of time, location, who will conduct, and subject. Identify procedures for including subcontractors. The Contractor shall provide a copy of the Weekly Tool Box Meeting and Monthly Supervisor's Safety Meeting to the Contracting Officer.

1.5.1.5 Fire Prevention and Protection

Identify source of fire protection. Insure adequate fire extinguishers, water barrels, or other fire-fighting equipment is located on site. Explain prevention activities to include storage areas and special hazards such as welding and use of flammable liquids, and other special hazards.

1.5.1.6 Housekeeping

Daily cleanup of all debris and waste materials is required. Adequate disposal containers should be placed strategically around the site. Debris shall be removed on a regular basis. Explain procedures that include use of barrels, dumpsters, trash chutes, etc.

1.5.1.7 Mechanical Equipment Inspection

All mechanical equipment (trucks, cranes, forklifts, backhoes, graders, etc.) shall be inspected prior to use and at fixed intervals throughout the life of the contract. Explain how inspections will be accomplished (frequency, by whom, and records to be kept).

1.5.1.8 First Aid and Medical Facilities

First aid facilities shall be made available on the job site. Arrangements for emergency medical attention shall be made prior to start of work. All emergency numbers (doctor, hospital, ambulance, fire department) shall be posted at the project superintendent's office.

1.5.1.9 Sanitation

Include provisions for toilet facilities, drinking water and washing facilities. A sufficient number of toilet facilities as specified in EM 385-1-1 shall be provided unless permission is granted to use existing facilities (portable chemical are authorized). Insure safe drinking water and individual cups are available. For the projects where corrosive or toxic materials are used, separate washing facilities are required.

1.5.1.10 Safety Promotions

The Contractor shall promote accident prevention. Identify method (posters, awards etc.).

1.5.1.11 Accident Reporting

All accidents (employee injuries, vehicle, building, or equipment damage etc.) regardless of their severity, shall be reported to the onsite government representative or to the area engineer, who in turn will advise the Contractor of forms to be submitted and timeframes.

1.5.1.12 Job Hazard Analysis

When job situations change and it is necessary to alter safety requirements, a Job Hazard Analysis will be accomplished, documented, and added as an addendum to the Accident Prevention Plan. Each Job Hazard Analysis shall include, but not be limited to, a description of the work, probable hazards related to that work and positive precautionary measures to be taken to reduce or eliminate each hazard. An example of changing situations may be new subcontractors performing work such as earth moving, trenching, concrete work, roofing, electrical, masonry etc. The onsite government representative will determine the format and amount of detail required of the written plan.

1.6 RADIOLOGICAL EQUIPMENT

In addition to any applicable Nuclear Regulatory Commission, state, local, or other federal licenses or permits, and in accordance with requirements of EM 385-1-1, Safety and Health Requirement Manual, the Contractor is required to obtain a service permit to use, store, operate, or handle a

radiation producing machine or radioactive materials on a Department of Defense (DOD) Installation. The service permit shall be obtained from the appropriate U.S. Army or U.S. Air Force Command through the Contracting Officer's representative. The Contractor should notify the Contracting Officer during the prework conference if a radiation producing device will be utilized on a DOD Installation in order to determine the permit application requirements, and allow a lead time of 45 days for obtaining a permit.

1.7 EXCAVATION AND TRENCHING

The standards for excavation and trenching are outlined in 29 CFR 1926, Subpart P. These standards shall be followed in addition to those outlined in EM 385-1-1.

1.8 SPECIAL IOWA AAP SAFETY/SECURITY REQUIREMENTS (AUGUST 2000)

Failure of any Contractor employee to comply with the following safety/security requirements listed below will result in loss of issued access badges and access to the Iowa Army Ammunition Plant (IAAAP) property.

1.8.1 Speed Limits

Speed limits for this installation are as follows:

* Daylight Hours-45 MPH * Night Time Hours---35 MPH

1.8.2 Prohibited Article Passes

A prohibited article pass will only be required for cameras, recording devices and binoculars "when entering a limited area." This means the active production lines and Yard "D".

Anyone having authorization to enter the installation may have a camera, recording device or binoculars in their possession in any area "except limited areas" without a pass.

Anyone having authorization to enter the installation may also use that camera to take pictures of wildlife, landscape and similar pictures at their leisure.

Anyone having authorization to enter the installation is also permitted to use a recording device and/or binoculars.

1.8.3 Required Activities

1. Present your identification badge to the guard at line gates for registration upon entrance and exit.
2. Surrender matches and lighters (includes vehicle lighters) to guard.
3. All persons and vehicles are subject to search for contraband and prohibited articles, step out of the vehicle in order to allow guard to perform searches.
4. Smoke in approved locations ONLY, lighters will be provided in approved areas.
5. All vehicle drivers and passengers will be required to wear seat

belts in all 1968 or newer vehicles while in the plant area.

6. Drive directly to the work site, no sightseeing.

7. All badges furnished to contractors are actually government property and must be returned to Visitor Welcome Center when the contract expires or sooner if the job is completed prior to the expiration date.

Any badges not returned must be paid for at \$10.00 per badge. Any time a badge is lost or forgotten and a replacement badge has to be issued, the new badge will be paid for at a cost of \$10.00.

8. Wear your identification badge while on the job, preferably on the outer garment and located in the upper left portion of the body.

9. Report any accident or near miss immediately to an area supervisor, safety representative (ext.7013), your AO contact or guard headquarters(ext.7414)

10. Material Safety data Sheets (MSDS) must be brought to the Fire Station prior to any chemicals being delivered to the work site.

11. Safety glasses are required in all areas except changehouses, cafeterias, and offices. Safety shoes, hearing protection and other PPE are also required for certain areas. Check with your point of contact or a safety representative.

12. Safety Work Permit is required for all work within the IAAAP. (Call Safety Representative at ext.7013/7434).

13. Obey signs on fences, posts, structures and gates stating "DANGER DO NOT ENTER" they will be located around all remote explosive operations and they MEAN what they say.

14. All Rooms/Bays in buildings containing explosive are posted for the number of personnel allowed in each bay. Please assure these posted limits are not exceeded.

15. Emergency Services-Ambulance, Fire, Security and Hazardous Materials Service may be obtained by dialing 17 on any in house phone. Give the person answering the phone, the location, type of emergency and any other pertinent information that may be helpful to responding personnel. If a Cellular phone is used, dial 911 and this will give you Des Moines County Dispatch (be sure and tell the dispatcher at what location at the IAAAP that you need assistance.)

16. One (1) 10# (min.) ABC fire extinguisher shall be available at all work sites. The extinguisher must be approved by the fire department prior to stating the job.

1.8.4 ACTIVITIES NOT PERMITTED

1. Don't enter areas (or buildings) or perform work not covered by a Safety Work Permit.

2. Don't enter buildings (or areas) other than those involved in in your project or areas your authorized to visit.

3. Don't burn or weld without a Safety Work Permit (HOT PERMIT).

4. Don't handle items (explosive or inert). Ask a supervisor, Safety representative or your IAAP contact if you require a closer look.
5. Don't deface, destroy or disturb any notice, sign, building, shrub, tree or vegetation unless directed to do so in the work specification.
6. Don't wear your badge off post.
7. Don't bring any of the following items into the plant area: Strike anywhere matches, intoxicating liquors, drugs, narcotics or firearms and ammunition.
8. Don't take recording devices, binoculars or photographic equipment into a production line or Yard D without a pass obtained from Security.
9. Don't take Cellular phones inside buildings containing explosive or in the Test Fire area.
10. Don't distract operation personnel. Direct your questions to a supervisor or your IAAAP contact.
11. Don't take food into buildings containing explosive.

1.8.5 SECURITY REQUIREMENTS

In addition to the requirements of this section, See Section 01511 IOWA AAP PLANT CONSTRUCTION SECURITY REQUIREMENTS.

1.8.6 SIGNED STATEMENT

Each employee of the Contractor shall be required to sign a statement that reads:

"I have read and understand the Safety/Security Requirements of Section 01400 SPECIAL SAFETY REQUIREMENTS and agree to abide by the requirements stated therein.

Signature:_____Date:_____

Title:_____Organization:_____."

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

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SECTION 01415

METRIC MEASUREMENTS

03/97

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|------------|---|
| ASTM E 380 | (1993) Practice for Use of the International System of Units (SI) |
| ASTM E 621 | (1994) Practice for Use of Metric (SI) Units in Building Design and Construction |

1.2 GENERAL

This project includes metric units of measurements. The metric units used are the International System of Units (SI) developed and maintained by the General Conference on Weights and Measures (CGPM); the name International System of Units and the international abbreviation SI were adopted by the 11th CGPM in 1960. A number of circumstances require that both metric SI units and English inch-pound (I-P) units be included in a section of the specifications. When both metric and I-P measurements are included, the section may contain measurements for products that are manufactured to I-P dimensions and then expressed in mathematically converted metric value (soft metric) or, it may contain measurements for products that are manufactured to an industry recognized rounded metric (hard metric) dimensions but are allowed to be substituted by I-P products to comply with the law. Dual measurements are also included to indicate industry and/or Government standards, test values or other controlling factors, such as the code requirements where I-P values are needed for clarity or to trace back to the referenced standards, test values or codes.

1.3 USE OF MEASUREMENTS

Measurements shall be either in SI or I-P units as indicated, except for soft metric measurements or as otherwise authorized. When only SI or I-P measurements are specified for a product, the product shall be procured in the specified units (SI or I-P) unless otherwise authorized by the Contracting Officer. The Contractor shall be responsible for all associated labor and materials when authorized to substitute one system of units for another and for the final assembly and performance of the specified work and/or products.

1.3.1 Hard Metric

A hard metric measurement is indicated by an SI value with no expressed correlation to an I-P value, i.e., where an SI value is not an exact mathematical conversion of an I-P value, such as the use of 100 mm in lieu

of 4 inches. Hard metric measurements are often used for field data such as distance from one point to another or distance above the floor. Products are considered to be hard metric when they are manufactured to metric dimensions or have an industry recognized metric designation.

1.3.2 Soft Metric

- a. A soft metric measurement is indicated by an SI value which is a mathematical conversion of the I-P value shown in parentheses (e.g. 38.1 mm (1-1/2 inches)). Soft metric measurements are used for measurements pertaining to products, test values, and other situations where the I-P units are the standard for manufacture, verification, or other controlling factor. The I-P value shall govern while the metric measurement is provided for information.
- b. A soft metric measurement is also indicated for products that are manufactured in industry designated metric dimensions but are required by law to allow substitute I-P products. These measurements are indicated by a manufacturing hard metric product dimension followed by the substitute I-P equivalent value in parentheses (e.g., 190 x 190 x 390 mm (7-5/8 x 7-5/8 x 15-5/8 inches)).

1.3.3 Neutral

A neutral measurement is indicated by an identifier which has no expressed relation to either an SI or an I-P value (e.g., American Wire Gage (AWG) which indicates thickness but in itself is neither SI nor I-P).

1.4 COORDINATION

Discrepancies, such as mismatches or product unavailability, arising from use of both metric and non-metric measurements and discrepancies between the measurements in the specifications and the measurements in the drawings shall be brought to the attention of the Contracting Officer for resolution.

1.5 RELATIONSHIP TO SUBMITTALS

Submittals for Government approval or for information only shall cover the SI or I-P products actually being furnished for the project. The Contractor shall submit the required drawings and calculations in the same units used in the contract documents describing the product or requirement unless otherwise instructed or approved. The Contractor shall use ASTM E 380 and ASTM E 621 as the basis for establishing metric measurements required to be used in submittals.

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05/2000

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SECTION 01450

CHEMICAL DATA QUALITY CONTROL
05/2000

PART 1 GENERAL

Attachment # 1

(Appendix F, SAMPLE HANDLING PROTOCOL FOR LOW, MEDIUM AND HIGH CONCENTRATION SAMPLES OF HAZARDOUS WASTE)

Attachment # 2

(Table I, EXPLOSIVES Method 8330 Laboratory Criteria
Table II Reporting Limits for Target Analyte List Metals
Table III QC Acceptance Criteria for Metals for Laboratory Controls
Samples and Matrix Spikes/Matrix Duplicate Samples)

Attachment # 3

(Remedial Investigation/Risk Assessment, IAAAP, Middletown, Iowa, 21 May 1996, Section 6.4)

This section sets forth the Contractor's responsibility for sample collection, handling, reporting, and analysis requirements to ensure compliance with environmental regulations. The results will be used to gain additional information about site contamination and safety requirements during the waterline installation.

Previous Investigations performed at the Line 3A area of IAAAP are as follows:

1. Remedial Investigation/Risk Assessment, IAAAP, Middletown, Iowa, 21 May 1996, Section 6.4. This document shows soil investigation performed at several areas of Line 3A. See Attachment # 3.

2. Heating Plant Area, Steam Line, Proposed M107 Cooling Building and Line 3A Area, February 2000. Five surface soil samples were obtained in the Line 3A area as part of this investigation. These sample locations and analytical results are located on Figures G1.02, G1.03, G1.06 and G1.07. The five areas are designated as:

3ACP12-00
3ACP13-00
3ACP14-00
3ACP15-00
SLCP07-00

An area northwest of building 3A-05-1 was also sampled. A composite from the top three feet of each of the borings was sent for chemical analysis. These samples are designated:

CBSB08-03
CBSB09-03
CBSB10-03.

One surface composite consisting of soils from the 0-6" depth of the three

QAPP has been approved by the COR. The SAP shall be brief and less than 20 pages.

SD-06 Test Reports

Analytical Data Package; G-RE.

The Analytical Data Package, For this project the data shall be obtained in time to be used for safety requirements.

Field Testing Results;

The field testing results site map and analytical results shall be logged and submitted daily.

SD-07 Certificates

Laboratory Approval; G-RE

The Contract Laboratory shall submit the qualifications and any current certifications 30 days prior to initiation of sampling. Submit USACE validation letter or National Environmental Laboratory Accreditation Program (NELAP) certification.

FADC; G-RE

The Contractor shall submit the resume and qualifications of the Field Analytical Data coordinator.

1.3 ACRONYMS

The definition of acronyms used by the Contractor which pertain to chemical data quality control shall be clearly defined for all contract related products and communications.

1.4 CHEMISTRY REQUIREMENTS

1.4.1 Data Quality Requirements.

Sample acquisitions, chemical analyses and chemical parameter measurements shall be performed in such a manner that the resulting data meets and supports data use requirements. The chemical data shall be acquired, documented, verified and reported in a manner that assures that the specified precision, accuracy, representativeness, comparability, sensitivity, and completeness requirements are achieved. In order to meet these requirements the sampling protocol as is given in section 1.4.4 and appendix F (found as attachment # 1) and the analytical quality control requirements as given in section 3 and the tables found in attachment # 2 must be met. The requirements adhered to by the data shall be presented in the Sampling and Analysis Plan and shall address the following:

- a. Precision
- b. Accuracy
- c. Representativeness
- d. Comparability
- e. Completeness
- f. Method Sensitivity
- g. Documentation
- h. Data Validation

i. Data Reporting

The Contractor shall be responsible for the Project's data quality and for ensuring field team and laboratory compliance with the data requirements are followed.

1.4.2 Field Quality Control Samples

Field duplicate samples shall be collected at a minimum rate of 10 percent of the total number of samples, unless otherwise specified. Extra volumes of sample shall be obtained for Matrix Spike/Matrix Spike Duplicate Samples at the rate of 5 percent.

1.4.3 Government Quality Assurance Samples

Government QA samples are not required to be collected.

1.4.4 Sampling Requirements

The Contractor shall describe in the Sampling and Analysis Plan the implementation procedures to meet the requirements of the specifications. This shall include the sampling rationale, data types, quality needs and quantity needs sufficient to address the regulatory requirements and also to support decision making efforts. Soil sampling shall be performed at a timing sequence so the results will be available to the contractor before the construction field work has started. Soil samples will be obtained at areas of excavation so contamination extent will be known to the contractor and appropriate safety measures can be addressed. If water is encountered in the process of obtaining soil samples from the deeper borings a water sample shall be obtained and analyzed for explosives, method 8330 and RCRA metals. See table 1.

Table 1. Pre-Construction water samples

Assume 20 water samples for explosives, method 8330 and RCRA metals, method 6010/7000.

Disposal of groundwater shall be in accordance with 01355 ENVIRONMENT PROTECTION.

1.4.4.1 Soil Sampling Locations (pre-construction)

Soil samples shall be collected in the areas as specified in figures G1.01 through G1.08. The soil sample locations shall be surveyed. These sampling areas are selected so the contractor can gain information about any possible soil contamination. Not every water line excavation area will be sampled, but the areas selected were those that would have the highest probability of contamination and would best show if contamination would be present in the areas where water line excavations would occur. Assume that an extra ten (10) samples may be used for areas not anticipated by the designated sampling scheme. See table 2 for the number of pre-construction soil sample locations.

Table 2. Pre-Construction soil samples (Figures G1.01 through G1.08)

| <u>Figure</u> | <u># Samples</u> | <u>Analyses</u> |
|---------------|------------------|----------------------------|
| G1.01 | 5 | explosives and RCRA metals |

| | | |
|---------------|----------|----------------------------|
| G1-02 | 7 | explosives and RCRA metals |
| G1.03 | 8 | explosives and RCRA metals |
| G1.04 | 7 | explosives and RCRA metals |
| G1.05 | 7 | explosives and RCRA metals |
| G1.06 | 9 | explosives and RCRA metals |
| G1.07 | 9 | explosives and RCRA metals |
| G1.08 | <u>1</u> | explosives and RCRA metals |
| Total samples | 53 | |

Plus 10 samples to be used at the contractors descreSSION that will be analyzed for explosives and RCRA metals.

1.4.4.2 Soil Samples Types

Composite soil samples will be obtained from each of the sampling areas, which shall consist of approximately a 5 x 5 foot area. The pits used for Jacking and Boring will be somewhat larger (up to 8 x 16 feet), so the investigated area will be accordingly larger. The depth of the water line piping is at a maximum of about five to six feet below ground surface. A composite sample shall be obtained from five (5) samples within the selected areas. The subsamples obtained from the Jacking and Boring areas may require more than 5 in order to characterize the larger area. This will require subsamples from lateral and vertical extent of each area. Since the RCRA metals are generally in the form of water insoluble salts the contractor can use discretion when obtaining the composite samples. In known undisturbed areas it may be best to obtain the metal sample from composites at less deep areas. These decisions will be left to the contractor, with the intent that the subsamples shall be obtained throughout each area so as to completely characterize contamination within each area. The sub-samples will be placed in a stainless steel container, thoroughly mixed, then placed in the soil sample containers.

Soil samples shall be collected in accordance with the following protocol:

SAMPLING PROTOCOL

Sampling personnel shall record in the field log book the preparation activities that may be pertinent to the sampling event at each location. This documentation shall include information on the presence of surface staining, background vapor concentrations (vapor concentrations may be obtained for safety), depth that cover the extent of the composite sample collected, sampling equipment used, and sampling personnel involved.

* The samples shall be collected with stainless steel sampling equipment. The subsamples shall be collected and placed in a clean stainless steel bowl of an adequate volume to minimize spillage. A composite sample shall then be obtained from the thoroughly mixed contents.

* Sampling equipment shall be decontaminated between each sample.

* Soil shall be packed into the sample container with a spoon in an attempt to eliminate voids in the container. Once the sample container is filled with soil, the excess soil shall be removed from the container mouth so that the lid will properly seal.

* The sample material shall be placed in an appropriate container and placed in the cooler at ice temperature. Sample container and shipment requirements are given in appendix F (see attachment # 1).

* During sample collection, field personnel shall wear new, clean disposable gloves.

* The location of the area where the composite sample was obtained shall be surveyed.

* Samples shall be labeled and shipped according to specifications in the attached Appendix F to ER 1110-1-263 (see attachment # 1).

If it so occurs, the Contractor shall coordinate with the COR to determine the disposition of any unearthed contaminated soils or materials. Unearthed materials shall be manifested in accordance with DOT applicable requirements.

Drill Cuttings

Drill cuttings will be analyzed for Explosives.

1.4.5 Sample Analysis

The soil samples as is given in Table 1 shall be extracted and analyzed for Explosives by SW-846 Method 8330 and for RCRA Metals extracted by SW-846 method 5030A and analyzed by SW-846 method 6010, mercury by SW-846 Method 7471. The number of analyses are given in table 2.

1.4.6 Chemistry Requirements - Methodology

The Tables I, II and III (see attachment # 2) are some of the required reporting limits for the project. The Contract laboratory must be capable of achieving these reporting limits. The calibration of a method must bracket the reporting limit analyte level between a low-level standard and a high level standard. The Contractor must ensure that the Contract laboratory can adequately quantify low-level analytes such that a comparison of the analytical results to appropriate and applicable regulations can be made. The Contractor shall ensure that the reporting limits and analytes provided below are sufficient for the project. Any deviations from the limits prescribed in the below tables must be approved by the COR. The analytical turn-around time (TAT) shall be sufficient to meet project schedules, be economical and ensure quality data are obtained. The Contractor shall propose the TAT.

1.4.7 Sample Chain-of-Custody, Packing, Transportation, and Sample Designation

The Contractor shall address the procedures for sample packing, shipping and all chain of custody concerns as described in the temporary firing range stockpile. Identify the numbering scheme to be used on the labels and information regarding sample containers. The sample numbering scheme shall designate the sample as being obtained from a specific discrete area of line 3A. The numbering system shall be as follows:

3ACP16-(0-maximum depth)
through
3ACPxx-(0-maximum depth)

xx = the sequential number of composite area.
CP = composite sample.

The contractor will correlate the designated sample number to the placement

on the plots. The numbering sequence shall start at 16 (15 was the last soil sample number for previous sampling events at line 3A). If additional sampling events have occurred at line 3A before this waterline project the sample numbering sequence shall start after these samples.

1.4.8 Decontamination Procedure for Sampling Equipment

The decontamination area shall be established in an area of the site considered free from contamination. Equipment and personnel decontamination activities shall be centralized in this area. Decontamination water shall be collected in plastic containers. The decontamination water shall be disposed of in accordance with Section 01355 ENVIRONMENT PROTECTION.. Prior to arrival on-site, all equipment shall be steam cleaned. Equipment used for excavation and sampling shall be decontaminated prior to use in accordance with the following cleaning procedures:

- a. The backhoe and all support equipment shall be free from excess grease, oils, and caked-on soils from previous work prior to arrival at the site. Equipment which leaks fuel, coolant, and lubricants shall be removed from the site and repaired prior to use.
- b. Equipment or materials not used immediately after decontamination shall be placed on a plastic sheet, covered with plastic, and secured to avoid potential contamination.
- c. Clean with tap water and Laboratory detergent, (Liquinox or equivalent) using a brush if necessary to remove particular matter and surface films.
- d. Rinse three times with potable water.
- e. Rinse thoroughly with deionized water and allow to air dry.
- f. Wrap sampling equipment completely with aluminum foil, shiny side out, to prevent contamination if equipment is to be stored or transported.
- g. Equipment such as pumps, flow lines, etc., shall be flushed thoroughly with potable water prior to use.

Clean, disposable gloves shall be worn while handling sampling equipment during the final stages of decontamination.

1.4.9 Rinsate and Contaminated Water Disposal

This water consists of rinsate, decontamination and possible water from trench dewatering. Water from rinsate, decontamination and dewatering activities shall be disposed in accordance with the requirements of Section 01355 ENVIRONMENT PROTECTION.

1.4.10 Investigation Derived Waste

The contractor must dispose of any wastes generated for the sampling process and the decontamination process. All wastes shall be containerized until the analytical results indicate the wastes are non-hazardous. Non-dedicated (disposable) sampling equipment shall be decontaminated and disposed of in accordance with appropriate local, state and federal requirements. All materials that are hazardous shall be disposed of at a

Treatment, Storage and Disposal facility (TSD) in accordance with appropriate local, state and federal requirements.

1.4.11 Drill Cuttings

Any drill cuttings obtained for Jacking and Boring and Horizontal Directional drillings will be analyzed for Explosives and RCRA Metals.

1.5 LABORATORY APPROVAL

Any laboratory performing chemical analyses for this project shall be approved by the State of Iowa and have USACE or NELAP certification for the specified analyses prior to contract award.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL

The Contractor is responsible for chemical sample acquisition, sample analysis, instrumental measurements of chemical parameters and for chemical data quality control. An effective chemical data quality control system shall be established that meets the requirements for the chemical measurement applicable to the project. The chemical data quality control system shall consist of a Chemical Quality Management staff responsible for the sampling and measurement plans, analytical procedures, minimum data reporting requirements, and the organization necessary to produce the required chemical data. The system shall cover chemical measurements pertaining to and required for Contractor and subcontractor produced chemical data.

3.2 DATA VALIDATION AND REPORTING

3.2.1 Data Validation and Qualification

The Contractor shall verify the analytical data. This verification shall ensure at a minimum that the holding times are met, the surrogate recoveries are in QC limits, that blanks are reviewed, the Laboratory control samples are in QC limits, initial and continuing calibrations are in QC limits, provide an assessment of the overall analysis per sample batch, and shall qualify and ensure that the data has been appropriately qualified on the criteria established in the National Functional Guidelines. Data shall be qualified on the basis of the blank contamination, and the Contractor shall ensure that samples in a sample batch or in a sample cooler that are affected by field or laboratory contamination are appropriately qualified. The Contractor shall provide a summary of the data validation. The results of the data verification shall be reported in the Analytical Data Package.

3.2.1.1 Data Qualifiers

Data shall be "J" (estimated concentration) qualified, if such data are greater than the Method Detection Limit and less than the lowest calibration standard. Any result less than the Method Detection Limit shall be reported as non-detect. Appropriate EPA data qualifiers shall be used and defined for the data validation.

3.2.2 Analytical Data Package

The Analytical Data Package (ADP) shall report the analytical data for the project, and include in a separate section the field and laboratory Quality Control (QC) results. The ADP shall also provide a summary of the data validation, lab narratives, and a summary of achievement of project specific DQOs.

3.2.2.1 Data Reporting Requirements

The following are the minimum data reporting requirements for the Analytical Data Package. If the Contractor's laboratory uses the CLP forms, these shall be submitted for this requirement, along with the other requirements. Provide chromatograms full scale, which fill up the entire page, which clearly depict the base line, and limits of integration of all contaminants-of-concern peaks.

3.2.2.2 Laboratory Case Narrative

The associated laboratory case narratives shall be included in the results if the reported sample batch results are affected. If the QC is within limits for a sample batch, and the overall assessment is that the sample meets the data quality objectives, a statement to that effect must be included as well. The laboratory narratives will be provided for each sample batch for each type of analyses.

3.2.2.3 Sample Identification

The Contractor shall prepare a tabular presentation with matched contract laboratory sample identifications to the corresponding contractor sample identifications, if they are different. The table shall identify all field duplicates and field blanks as such and match their corresponding field samples where applicable. All of the field and laboratory Quality Control samples (field duplicates, trip blanks, Laboratory control samples, Method Blanks, Matrix Spike Duplicates/Matrix Spikes, and surrogate recoveries) shall be identified with the environmental samples in the associated batch or run as appropriate.

3.2.2.4 Data Verification Summary

A narrative of the data verification will be included with the Analytical Data Package. The results of the data validation, changes in the data qualification, will be included with the ADP or annotated on the appropriate pages of the ADP.

3.2.2.5 Sample Receipt

The Contractor shall include all Cooler Receipt Forms and Chain-of-Custody forms associated with the required sample results.

3.2.2.6 Quality Control Reporting Requirements

A complete set of QC results shall be reported for each analytical batch associated with the required sample results. The QC results shall include, but is not limited to, trip blanks, rinsate blanks, method blanks, laboratory control samples, blanks, surrogate and matrix spike recoveries, initial calibration forms, continuing calibration forms, laboratory duplicates and/or matrix spike duplicate pairs.

3.2.2.7 Quality Control Assessment

An assessment of the quality of each sample batch will be provided. This assessment will discuss the performance of the method, the performance of the quality control samples, holding times, surrogate spikes, post-digestion spikes, other quality control measures. This assessment will discuss which samples were affected by QC exceedances and field or laboratory contamination.

3.2.2.8 Data Review

Analytical Data which has not been subjected to data validation shall be reviewed by the FADC or other responsible qualified personnel to ensure data will meet the project needs. The detections, surrogate recoveries, MS/MSDs, field duplicates RPDs, LCS, method blanks shall be reviewed.

3.2.2.9 Data Evaluation and Presentation

The Contractor shall perform an evaluation of the soil sampling data and make a determination about the extent of contamination in the sampled areas. The contractor shall present this information to the COR so a final determination can be made about the disposition at each cell.

3.3 PERSONNEL QUALIFICATIONS

The Contractor's Chemical Quality Control Officer shall have, as a minimum, a bachelors degree in Chemistry or in a technical field, and a minimum of 2 years of experience with HTRW Chemical Quality Control including HTRW sampling and analysis, HTRW project requirements for data documentation and validation, and final HTRW project reports. The field sampling personnel shall have a minimum of 1 year college chemistry, and they shall be familiar with the operation and of all field instrumentation. The field sampling personnel shall be experienced and trained in sample collection, sample handling, and sample shipping procedures.

3.3.1 Field Analytical Data Coordinator

The FADC shall be responsible for sample collection, sample custodial duties, preparing data reports, sample maps, and implementing the SAP. Qualifications shall include field sample test kit expertise, reporting, data interpretation, and at least two years of chemistry education.

3.4 SAMPLING AND ANALYSIS PLAN

3.4.1 General

a. The SAP Plan shall identify personnel, qualifications and procedures for implementing a chemical data quality control system for Contractor and subcontractor. The plan shall include analytical capability and procedures; SAP responsibility; a corporate verification letter from management committing the assigned personnel to the project; and an organizational chart including submittal responsibilities and sequence for chemical data quality verification. Chemical measurements including sampling and/or chemical parameter measurement will not be permitted to begin until after acceptance of the SAP. The measurement of a chemical parameter, which is not included in the approved SAP and is not included in the contract specification, will not be permitted. The SAP shall identify how the Contractor shall provide oversight of the Laboratory's Data Quality. The SAP shall specify the Data objectives, PARCC, and other

detection limits (MDL's, PQL's), and QC parameters. The SAP shall be prepared according to EM-200-1.

b. The SAP shall show the sample locations, cell locations, and analytical methods. The SAP shall include a letter from the Contract laboratory stating their USACE validation status.

3.5 ANALYTICAL TESTING LABORATORY PERFORMANCE

The Contractor shall provide and/or require continued acceptable analytical performance and shall establish a procedure to address data deficiencies noted by review and/or quality assurance sample results. The Contractor shall provide and implement a mechanism for providing analytical labs with the SAP for monitoring the lab's performance and for performing corrective action procedures. The Contractor is responsible for acquiring analytical services with additional USACE validated laboratories in the event a project lab loses its USACE validation status during the project. The Contractor shall be responsible for the Contract laboratory data quality, precision and accuracy.

3.6 DOCUMENTATION

Documentation records shall be provided as factual evidence that required chemical data has been produced and chemical data quality has been achieved.

-- End of Section --

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ATTACHMENT # 1

APPENDIX F, SAMPLE HANDLING PROTPCOL FOR LOW,
MEDIUM AND HIGH CONCENTRATION SAMPLES FOR
HAZARDOUS WASTE

01450ATI

APPENDIX F TO ER 1110-1-263 (1 October 1990)

SAMPLE HANDLING PROTOCOL
FOR
LOW, MEDIUM AND HIGH CONCENTRATION SAMPLES
OF
HAZARDOUS WASTE

1. Purpose. This protocol provides guidance on sample volumes, containers, packing, and shipping for low, medium, and high concentration environmental samples taken for chemical analysis.
2. Applicability. The guidance in this appendix applies to all samples taken by USACE for HTRW chemical analysis. The requirements are consistent with those of the Environmental Protection Agency and all standard chemical methods generally used are included.
3. Low Concentration Samples. Low level samples are considered to be those collected off-site, around the perimeter of a waste site, or in areas where hazards are thought to be significantly reduced by normal environmental processes.

3.1. Waters.

3.2.1 Organics.

3.2.1.1 Bottle and Preservative Requirements.

- Four 1-liter amber glass bottles (Teflon-lined caps), iced to 4°C (may not be held at site over 24 hours). Remember: Leave some headspace!
- Two 40 ML glass VOA vials (with Teflon septa), iced to 4°C (may not be held at site over 24 hours). Fill completely! All air bubbles must be excluded. Add HCl (4 drops of concentrated HCl) or NaHSO₄ to pH < 2.
- The samples above are needed when Method 8240 is used to analyze volatile (or purgeable) organics, when Methods 8250 or 8270 are used to analyze for Base/Neutral /Acid (B/N/A) extractable organics, and when Method 8080 is used to analyze for pesticides and PCB's. Two of the 1-L bottles are needed for 8250 or 8270 and two for 8080.
- Oil and Grease, Total Organic Carbon (TOC) or TRPH. For each analyte, two 1-liter glass bottles (Teflon-lined cap), 5 ML 1:1 HCl (to pH < 2), and 4°C. Leave headspace.

3.1 Paperwork/Labels.

- (ENG Form 5021-R) Chain of Custody Record. It is important to note that only one site may be listed per form even if the sites have the same

project number. Top original goes with the samples; a copy should be saved for the sampler's files.

○ Receipt for Samples. This form complies with the requirements that the owner, operator, or agent-in-charge is legally entitled to : (1) a receipt describing the samples obtained from the site and; (2) a portion of each sample equal in volume or weight to the portion retained, if requested. The original form is retained for the Project Coordinator and a copy is given to the owner, operator, or agent-in-charge.

○ Sample Labels/Tags. You must label the sample with a date, time of collection, site name, and brief description on a label that will not float/soak off - no masking tape, please. Use only indelible ink on all labels. Numbered sample labels should be used on all samples. Some projects may also require the use of sample tags in addition to labels.

3.2 Packaging and Shipping.

- Waterproof metal (or equivalent strength plastic) ice chests or coolers only.
- After filling out the pertinent information on the sample label and tag, put the sample in the bottle or vial and screw on the lid. For bottles other than VOA vials, secure the lid with strapping tape. (Tape on VOA vials may cause contamination.) Then, secure the string from the numbered approved tag around the lid.
- Mark volume level on bottle with grease pencil.
- Place about 3 inches of inert cushioning material such as vermiculite in the bottom of the cooler.
- Enclose the bottles in clear plastic bags through which sample tags and labels are visible, and seal the bag. Place bottles upright in the cooler in such a way that they do not touch and will not touch during shipment.
- Put in additional inert packing material to partially cover sample bottles (more than halfway). Place bags of ice around, among, and on top of the sample bottles. If chemical ice is used, it should be placed in a plastic bag.
- Fill cooler with cushioning material.
- Put paperwork (chain of custody record) in a waterproof plastic bag and tape it with masking tape to the inside lid of the cooler.
- Tape the drain shut.
- Secure lid by taping. Wrap the cooler completely with strapping tape at a minimum of two locations. Do not cover any labels.

- Attach completed shipping label to top of the cooler.
- Put "This Side Up" labels on all four sides and "Fragile" labels on at least two sides.
- Affix numbered and signed custody seals on front right and back left of cooler. Cover seals with wide, clear tape.

Remember that each cooler cannot exceed the weight limit set by the shipper.

3.1 Inorganics.

3.2.1. Bottle and Preservative Requirements.

- Metals. One 1-liter high density polyethylene bottle (Teflon-lined cap), adjust to pH < 2 with 1:1 HNO₃ (usually 3 mL).
- Cyanides. One 1-liter high density polyethylene bottle (Teflon-lined cap), adjust to pH > 12 with NaOH (usually 2 mL of 10N NaOH or 4 pellets), and 40°C.
- Sulfide. One 1-liter high density polyethylene bottle (Teflon-lined cap), 4 mL 2.0 N zinc acetate and adjust pH > 9 with NaOH, and 40°C.
- Fluoride. One 1-liter high density polyethylene bottle (Teflon-lined cap), no preservative, and 40°C.
- pH. No preservative. Must be measured twice immediately in field. Do not ship.
- Ammonia, Total Kjeldahl Nitrogen, Nitrate/Nitrite. For each analyte, one 1-liter high density polyethylene bottle (Teflon-lined cap), adjust to pH < 2 with H₂SO₄ (usually 4 mL 1:1 H₂SO₄), and 40°C.

3.2.2 Paperwork/Labels.

- Inorganic Paperwork is the same as described for organics (see Section 3.1.1.2. above) and includes the Chain of Custody Record, Receipt for Samples, and Labels/Sample Tags. See previous examples and explanations.

3.2.3 Packaging and Shipment.

- Follow packaging and shipping requirements listed for organics (see Section 3.1.1.3 above). "Fragile" labels are optional for coolers not containing glass bottles. In cases where ice is not required (metals), fill cooler with only packing material. Once again, remember that the cooler must not exceed the shipper's weight limit.

3.2.3 Soils/Sediments (Organics and Inorganics).

3.2.3.1 Bottle and Preservative Requirements.

- Two 8-ounce glass wide mouth jars at least 3/4 full (Teflon-lined caps), iced to 4°C - one jar for organics (non-VOA) and one jar for inorganics. For analysis of volatiles in soil, two 40 mL VOA vials or two 125 mL jars with Teflon septa are used. These should be completely filled and iced to 4°C.

3.2.3.1 Paperwork/Labels.

- Follow paperwork requirements listed for water samples in Section 3.1.1.2 above.

3.2.3.2 Packaging and Shipping.

- Follow packaging and shipping requirements in Section 3.1.1.3 above. Be sure that the shipping cooler does not exceed the shipper's weight limits.

4. Medium Concentration Samples. Medium level samples are most often those collected on-site, in areas of moderate dilution by normal environmental processes.

4.1 Water/Liquids (Organics and Inorganics).

Note: Samples are not known to contain highly toxic compounds.

4.1.1 Bottle and Preservative Requirements.

- Four 32-ounce wide mouth glass jars (Teflon-lined caps), no preservatives, and iced to 4°C for B/N/A extractable organics and PCB/Pesticides (two jars for each method). Remember: Leave some headspace.
- Two 40 mL glass VOA vials (Teflon septa), Iced to 4°C. Fill completely. No headspace.
- Two 16-ounce wide mouth glass jars nearly full (Teflon-lined caps) one for metals and one for cyanides. (Preserved as for low level. See Section 3.1.1.1.)

4.1.2 Paperwork/Labels.

- See previous examples. Follow paperwork requirements in Section 3.1.1.2. for low concentration samples.

4.1.3 Packaging and Shipping.

- Secure sample jar lids with strapping tape or evidence tape. At the same time secure string from USEPA numbered tag around lid.

- Mark volume level of bottle with grease pencil.
- Position jar in Ziploc bag so that tags may be read.
- Place about 1/2 inch of cushioning material in the bottom of metal can.
- Place jar in can and fill remaining volume of can with cushioning material.
- Close the can using three clips to secure lid.
- Write sample number on can lid. Indicate "This Side Up" by drawing and arrow and place "Flammable Liquid N.O.S." label on can. Personnel who ship samples must be sure to comply with DOT shipping regulations and not knowingly over-classify a sample prior to shipment. If the person shipping a sample knows that the sample is not a "Flammable Liquid" (i.e., a water phase sample or a soil sample), he should not classify it as "Flammable Liquid."
- Place about 1 inch of packing material in bottom of cooler.
- Place cans in cooler and fill remaining volume of cooler with packing material. Add ice bags if required.
- Put paperwork in plastic bags and tape with masking tape to inside lid of cooler.
- Tape drain shut.
- After acceptance by shipper, tape cooler completely around with strapping tape at two locations. Secure lid by taping. Do not cover any labels.
- Place lab address on top of cooler.

Note: Write "Flammable Liquid N.O.S." on side of cooler if this is not marked on the margin of your DOT label.

- For all medium and high concentration shipments, complete shipper's hazardous material certification form.
- Put "This Side Up" labels on all four sides, "Flammable Liquid N.O.S." and "Danger-Peligro" on all sides.

Note: "Danger-Peligro" labels should be used only when net quantity of samples in cooler exceeds 1 quart (32 ounces) for liquids or 25 pounds for solids. In other words, for our purposes "Danger-Peligro" labels will never be used for Flammable Solids N.O.S.

- Affix number custody seals on front right and back left of cooler.

Cover seals with wide, clear tape.

4.2 Soils/Sediments/Solids (Organics and Inorganics).

4.2.1 Bottles and Preservatives Requirements.

- For analysis of volatiles, two 40 mL VOA vials or two 125 mL jars with Teflon septa are used. These should be completely filled and iced to 4°C.
- Two 8-ounce wide mouth glass jars, 3/4 full (Teflon-lined caps), no preservatives, one jar for organics (non-VOA) and one jar for inorganics (metals and cyanide) or
- Four 4-ounce wide mouth glass jars each 3/4 full (Teflon-lined caps), no preservative; two jars for organics (non-VOA) and two jars for inorganics.

4.2.2 Paperwork/Labels.

- See previous examples. Follow paperwork requirements listed in Section 3.1.1.2 for low concentration samples.

4.2.3 Packaging and Shipping.

- Follow packaging and shipping requirements listed in Section 3.1.1.3 for medium concentration water/liquids above substituting "Flammable Liquid N.O.S." with "Flammable Solid N.O.S."

5. High Concentration Samples (Hazardous: Determined Not to be D.O.T.-Defined Poison A). High concentration samples include those from drums, surface impoundments, direct discharges, and chemical spills, where there is little or no evidence of environmental dilution. High concentration (or high hazard) samples are suspected to contain greater than 15% concentration of any individual chemical substituent.

5.1 Liquids (Organics and Inorganics).

5.1.1 Bottle and Preservative Requirements.

- One 8-ounce wide mouth glass jar filled 1/2 to 3/4 full (Teflon-lined cap). No preservative.

5.1.2 Paperwork/Labels.

- See previous examples. Follow paperwork requirements listed in Section 3.1.1.2 above.
- Shipper may require special forms to be completed before shipment of high hazard concentration samples.

5.1.3 Packaging and Shipping.

- Follow packaging and shipping requirements listed in Section 3.1.1.3. above for medium concentration water/liquids.

5.2 Soils/Sediments/Solids (Organics and Inorganics).

5.2.1 Bottle and Preservative Requirements.

- One 8-ounce wide-mouth glass jar filled 1/2 to 3/4 full (Teflon-lined cap). No preservative.

5.2.2 Paperwork/Labels.

- Follow paperwork requirements in Section 3.1.1.2 above.

5.2.3 Packaging and Shipping.

- Follow packaging and shipping requirements listed in Section 3.1.1.3 for medium concentration water/liquids, substituting "Flammable Liquid N.O.S." with "Flammable Solid N.O.S."

TABLE F-1
SAMPLE CONTAINERS, PRESERVATIVES, AND HOLDING TIMES

| <u>Matrix</u> | <u>Parameter¹</u> | <u>Low Concentration Samples</u> | | | <u>Maximum Holding Times:</u> |
|---------------------|---|----------------------------------|--|-------------------------------|-------------------------------|
| | | <u>Container²</u> | <u>Preservation³</u> | <u>Extraction⁴</u> | |
| Water | Volatiles | 2 x 40 mL 8 G, Septa vial | Ice to 40C 4 drops con. HCL or NaHSO ₄ to pH < 2 | --- | 14 d |
| Water | B/N/A | 2 x 1 L 5,8 amber G | Ice to 40C | 7 d | 40 d |
| Water | PCBs, Pesticides amber G | 2 x 1 L 5,8 | Ice to 40C | 7 d | 40 d |
| Water | Metals ⁶ | 1 x 1 L P | HNO ₃ to pH < 2 | --- | 6 mo ⁶ |
| Water | TRPH | 2 x 1 L G | Ice to 40C | --- | 28 d |
| Water | Common | 1 x 1 L 7 G | Ice to 40C | --- | 28 d ⁷ |
| Water | Explosives | 2 x 1 L G (amber) | Ice to 40C | 7 d | 40 d |
| Water | Cyanide | 1 x 1 L P | NaOH to pH > 12 Ice to 40C | --- | 14 d |
| Soils/ Sediments | Volatiles 2 x 40 mL G Ice to 40C or 2 x 125 mL G, Septa vial | | | --- | 14 d |

| | | | | | |
|---------------------|-------------------------------------|------------|------------|--------------------|---------|
| Soils/ Sediments | B/N/A, PCBs, Pesticides | 1 x 8 oz G | Ice to 40C | 14 d | 40 d |
| Soils/ Sediments | Metals, Cyanide (Cyanide & TRPH) | 1 x 8 oz G | Ice to 40C | --- (TRPH: 28d) | 6 mo |
| Soils/ Sediments | Explosives | 1 x 4 oz G | Ice to 40C | 14 d | 8x 40 d |

TABLE F-2
SAMPLE CONTAINERS AND PRESERVATIVES⁹

| <u>Matrix</u> | <u>Parameter¹</u> | <u>Medium Concentration Samples</u> | |
|---------------------|-------------------------------|-------------------------------------|---|
| | | <u>Container²</u> | <u>Preservation³</u> |
| Water/Liquid | Volatiles | 2 x 40 mL G, | Ice to 40C8 |
| Water/Liquid | B/N/A5 | 2 x 32 oz wide | Ice to 40C8 mouth jars, G |
| Water/Liquid | PCBs5, Pesticides | 2 x 32 oz wide | Ice to 40C8 mouth jars, G |
| Water/Liquid | Metals | 1 x 16 oz wide | HNO3 to pH < 2 mouth jar, G |
| Water/Liquid | Cyanide | 1 x 16 oz wide | Ice to 40C mouth jar, G |
| Water/Liquid | Explosives | 2 x 1 L G | Ice to 40C (Amber) |
| Soils/ Sediments | Volatiles | | 2 x 40 mL G or Ice to 40C 2 x 125 mL G |
| Soils/ Sediments | B/N/A, PCBs, Pesticides | 1 x 8 oz wide | --- mouth jar, G |
| Soils/ Sediments | Metals, Cyanide, TRPH TRPH | 1 x 8 oz wide | Ice to 40C mouth jar, G (Cyanide & |

Soils/
Sediments

Explosives

1 x 4 oz wide
mouth jar, G
Ice to 40C

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High Concentration Samples

| <u>Matrix</u> | <u>Parameter¹</u> | <u>Container²</u> | <u>Preservation</u> |
|---------------|------------------------------------|------------------------------|---------------------|
| Liquid | All organic and inorganic analyses | 1 x 8 oz wide mouth jar, G | ---- |
| Solid | All organic and inorganic analyses | 1 x 8 oz wide mouth jar, G | ---- |

1. B/N/A = Base/Neutral/Acid extractables; TRPH = Total Recoverable Petroleum Hydrocarbons.

2. All containers must have Teflon-lined seals (Teflon-lined septa for VOA vials). G = Glass; P = High Density polyethylene.

3. Sample preservation will be done in the field immediately upon sample collection. If water samples are filtered in the field, differential pressure methods using 45 micron filters will be used, and preservatives added after filtration. VOA samples should never be filtered.

4. When only one holding time is given, it implies total holding time from sampling until analysis.

5. Three bottles are required on at least 5-10% (but at least one) sample so that the laboratory can perform all method QC checks for SW-846 method.

6. Total Recoverable Metals for water samples. Holding time for Hg is 28 days in glass; for Cr(VI) is 24 hours.

7. Cl⁻, Br⁻, F⁻, NO₃⁻, NO₂⁻, PO₄³⁻, SO₄²⁻; 1 L for each method; orthophosphate requires filtration. Holding time for extraction is 48 hours for NO₂⁻, NO₃⁻, and PO₄³⁻ if not preserved with H₂SO₄ to pH < 2.

8. Samples with residual chlorine present will be dechlorinated with sodium thiosulfate as specified in SW-846 (Third edition).

9. Holding times for medium concentration samples are the same as those specified for low concentration samples.

ATTACHMENT # 2

Table I, EXPLOSIVES Method 8330 Laboratory Criteria

Table II, Reporting Limits for Target Analyte List Metals

Table III, QC Acceptance Criteria for Metals for Laboratory Control Samples and Matrix Spikes/Matrix Spike Duplicate Samples.

Table I

| EXPLOSIVES Method 8330 laboratory Criteria | | | | | | | |
|--|------------|------|------------|------|---------------------|--------------|----------------------|
| Compounds | Soil mg/kg | | Water ug/L | | Soil LCS, MS/MSD | RPD Limit | Water LCS, MS/MSD |
| | MDL | RL | MDL | RL | | | |
| 1,3,5-TNB | 0.05 | 0.25 | 0.06 | 0.35 | 75-125 % | 25 % | 60-110 % |
| 1,3-DNB | 0.05 | 0.25 | 0.08 | 0.46 | 75-125 % | 25 % | 60-110 % |
| 2,4,6-TNT | 0.05 | 0.25 | 0.07 | 0.34 | 75-125 % | 25 % | 60-110 % |
| 2,4-DNT | 0.05 | 0.25 | 0.02 | 0.24 | 75-125 % | 25 % | 60-110 % |
| 2,6-DNT | 0.05 | 0.25 | 0.08 | 0.15 | 75-125 % | 25 % | 60-110 % |
| 2-Amino-4,6-DNT | 0.05 | 0.26 | 0.03 | 0.21 | 75-125 % | 25 % | 60-110 % |
| 2-Nitrotoluene | 0.05 | 0.26 | 0.08 | 0.18 | 75-125 % | 25 % | 60-110 % |
| 3-Nitrotoluene | 0.05 | 0.26 | 0.04 | 0.26 | 75-125 % | 25 % | 60-110 % |
| 4-Amino-2,6-DNT | 0.05 | 0.26 | 0.06 | 0.13 | 75-125 % | 25 % | 60-110 % |
| 4-Nitrotoluene | 0.05 | 0.26 | 0.08 | 0.27 | 75-125 % | 25 % | 60-110 % |
| HMX | 0.4 | 2.2 | 0.2 | 1.6 | 75-125 % | 25 % | 60-110 % |
| Nitrobenzene | 0.05 | 0.25 | 0.07 | 0.56 | 75-125 % | 25 % | 60-110 % |
| RDX | 0.2 | 1.0 | 0.3 | 1.3 | 75-125 % | 25 % | 60-110 % |
| Tetryl | 0.1 | 0.65 | 0.2 | 0.82 | 60-110 % | 25 % | 60-110 % |
| 3,5 DNA | 0.042 | 0.65 | 0.14 | 0.44 | 75-125 % | 25 % | 60-110 % |

TABLE II
REPORTING LIMITS FOR TARGET ANALYTE LIST METALS¹

| Analyte | ICP ² | | AA-DA ³ | | AA-GF ⁴ | |
|---------------|------------------|---------------|--------------------|------------------|--------------------|---------------|
| | Water ug/L | Soil mg/kg | Water ug/L | Soil mg/kg | Water ug/L | Soil mg/kg |
| Aluminum, Al | 100 | 10 | - | - | - | - |
| Antimony, Sb | 60 | 6 | - | - | - | - |
| Arsenic, As | - | - | - | - | 5 | 0.5 |
| Barium, Ba | 10 | 1 | - | - | - | - |
| Beryllium, Be | 2 | 0.2 | - | - | - | - |
| Cadmium, Cd | 5 | 0.5 | - | - | - | - |
| Calcium, Ca | 200 | 20 | - | - | - | - |
| Chromium, Cr | 10 | 1 | - | - | - | - |
| Cobalt, Co | 10 | 1 | - | - | - | - |
| Copper, Cu | 20 | 2 | - | - | - | - |
| Iron, Fe | 100 | 10 | - | - | - | - |
| Lead, Pb | - | - | - | - | 3 | 0.5 |
| Magnesium, Mg | 200 | 20 | - | - | - | - |
| Manganese, Mn | 10 | 1 | - | - | - | - |
| Mercury, Hg | - | - | 0.2 ⁵ | 0.1 ⁵ | - | - |
| Nickel, Ni | 40 | 4 | - | - | - | - |
| Potassium, K | 5000 | 500 | - | - | - | - |
| Selenium, Se | - | - | - | - | 5 | 0.5 |
| Silver, Ag | 10 | 1 | - | - | - | - |
| Sodium, Na | 5000 | 500 | - | - | - | - |
| Thallium, Tl | - | - | - | - | 5 | 0.5 |
| Vanadium, V | 10 | 1 | - | - | - | - |
| Zinc, Zn | 20 | 2 | - | - | - | - |

¹ All methods contained in EPA SW-846, 3rd Edition (1986).

² ICP = Inductively Coupled Plasma; Method 6010

³ AA-DA = Atomic Absorption - Direct Aspiration; Method 7470 for aqueous samples and Method 7471 for soil samples.

⁴ AA-GF = Atomic Absorption - Graphite Furnace; Method 7060 for Arsenic, Method 7421 for Lead, Method 7740 for Selenium, Method 7841 for Thallium.

⁵ Cold Vapor Technique

TABLE III
QC ACCEPTANCE CRITERIA¹ FOR METALS
FOR LABORATORY CONTROL SAMPLES AND MATRIX SPIKES/
MATRIX DUPLICATE SAMPLES

| Parameter | Method ² | Matrix | Accuracy (% Recovery) | Precision (RPD) % |
|-------------------------|------------------------|--------|--------------------------|----------------------|
| Metals-ICP ³ | 3005/6010 | Water | 75-125 | 20 |
| | 3050/6010 | Soil | 75-125 | 20 |
| Antimony | 3005/6010 | Water | 75-125 | 20 |
| | CLP ⁴ /6010 | Soil | 75-125 | 20 |
| Arsenic-GFAA | 7060 | Water | 75-125 | 20 |
| | 3050/7060 | Soil | 75-125 | 20 |
| Lead-GFAA | 3020/7421 | Water | 75-125 | 20 |
| | 3050/7421 | Soil | 75-125 | 20 |
| Selenium-GFAA | 7740 | Water | 75-125 | 20 |
| | 3050/7740 | Soil | 75-125 | 20 |
| Mercury-CVAA | 7470 | Water | 75-125 | 20 |
| | 7471 | Soil | 75-125 | 20 |

1 Guidance provided by USEPA CLP Statement of Work for Inorganics Analysis, SOW No. 788, Rev. 2/89 and 6/89.

2 EPA SW-846, 3rd Edition (1986)

3 See Section 8 for list of ICP metals

4 Section III, Page D-5, Contract Laboratory Program SOW for Inorganics Analysis (March 1990) sample preparation

RPD = Relative percent difference

ICP = Inductively coupled plasma spectrometry

GFAA = Graphite furnace atomic absorption

CVAA = Cold Vapor atomic absorption

For analysis of total metals, water samples will not be filtered prior to digestion.

Attachment # 3

Remedial Investigation/Risk Assessment, IAAAP, Middletown,
Iowa, 21 May 1996, section 6.4)

6.4 LINE 3A (R04)

6.4.1 Site Background

6.4.1.1 Site Description

6.4.1.1.1 Site Features and Operational History

Line 3A is located in western IAAP, west of the Firing Site Area and northwest of the Demolition Area. The site encompasses approximately 119 acres, and is surrounded by a security fence. The site contains approximately 17 buildings for explosive related processing which includes: Loading Line Storage (01); Filter Building (70); Melt Loading (05); Booster Service Magazine (16); TNT Screening (50); TNT Service Magazine (08); Ammonium Nitrate Service Magazine (06); Black Powder Pellet (20); Fuse Testing (23); Drilling and Boosting (10); Assembly and Shipping (12); and Solvent Storage (03). The 2 melt buildings (3A-05-01 and 3A-05-02) have historically generated the highest volume of wastewater at Line 3A. See Figure 6.4-1.

Building 3A-05-1 consists of 3 floors with a combined area of 16,972 feet. Access to the basement is through an outside-entrance crawlspace measuring about 2 feet square. The construction of the basement is concrete footer over dirt floors. A wooden catwalk is suspended approximately 8-10 feet above the floor. According to Mr. Hicks, the asbestos insulation overwrapping steamlines is deteriorating and friable asbestos is exposed; this problem is pervasive at all melts, but is most significant at Line 3A. This melt/pour is inactive.

Building 3A-05-2 consists of 3 floors with a combined area of 18,629 feet. Access to the basement is through an outside-entrance crawlspace measuring about 2 square feet. The construction of the basement is concrete footer over dirt floors. A wooden catwalk is suspended approximately 8-10 feet above the floor. According to Mr. Hicks, the asbestos insulation overwrapping streamlines is deteriorating and friable asbestos is exposed. This melt/pour is inactive.

Line 3A was constructed in 1941 and began operation in 1943. Production was discontinued in 1945, but resumed in 1949 and continued until 1989. Until 1989 it functioned as an artillery loading, assembling, and packing operation. Explosives were shipped into the plant, melted, then poured into 155 mm artillery rounds. Final assembly of the finished munitions was then conducted, and the completed product was either stored or shipped off-site. Line 3A was recently updated, reopened, and is currently producing the Volcano anti-tank mine.

6.4.1.1.2 Topography and Surface Water

Line 3A is located in the dissected till plain section of the Central Lowland Province of the Southern Iowa Drift Plain Region. These areas, which have been affected by continental glaciation, exhibit broad, flat to gently undulating terrain. Line 3A is located on a localized topographic high approximately 702 feet above mean sea level (msl)

(Dames & Moore 1979). The surrounding ground slopes to the north, south, and west. Four intermittent streams flow from Line 3A. Three flow for approximately one mile south toward the Skunk River, and 1 flows one-half mile north to discharge into Long Creek. The streams provide drainage to Line 3A.

The location and topography of Line 3A is depicted on the USGS Danville Quadrangle Map (Figure 6.4-2). Site features and surface drainage are shown on a reproduction of an aerial photographic survey conducted at Line 3A by EMSL for USEPA Region 7, February 1984.

6.4.1.1.3 Site Specific Geology

The Soil Survey of Des Moines County Iowa (USDA, SCS, et.als., 1983) associates the majority of the Line 3A area with the Belinda and Pershing soil series. The Belinda soil series, found immediately in and around the production buildings, is a loess deposit typically described as a poorly drained soil with a relatively low permeability. The Pershing soil series, which makes up the side slopes around the facility, is a loess deposit typically described as a moderately well drained or somewhat poorly drained soil with a low permeability.

Based on the well logs for JAW-16, JAW-18, and JAW-21 installed by JAYCOR during Phase II of the RI, the location of the Kellersville Till at Line 3A is approximately 50 to 55 feet bgs (Appendix C).

The uppermost bedrock unit is associated with the Osage Series of southeastern Iowa. This Series is composed predominantly of cherty carbonate rocks interstratified with minor amounts of shale. The Osage Series is divided into 3 members; the Warsaw Formation, Keokuk Limestone, and Burlington Limestone. The Warsaw Formation is divided into upper and lower members from lithologic and faunal evidence and the dominance of geodes in the lower beds. The upper Warsaw Formation is the uppermost bedrock unit in the Line 3A area.

A rock core of the Warsaw Formation was obtained from well JAW-18. The core exhibits interbedded dolomitic fossiliferous calcarenites with incorporated argillaceous material, fissile shale, and dolomitic limestone. Fenestrate bryozoans are the dominant fossils found in the cores with fragments of brachiopods and crinoids. The fossils comprise the darker matrix of the rock cores. Photographs of representative rock cores of the Warsaw Formation are provided as Appendix E.

6.4.1.1.4 Hydrogeology

Eight monitoring wells were completed at Line 3A. Five were placed in the upper glacial till aquifer ranging from 7.5 to 17.5 bgs. Two of these wells were located on the northern side of the facility (JAW-17 and JAW-20) and 3 on the southern (JAW-15, JAW-19, and JAW-22). Three monitoring wells, 2 on the northern side of the facility (JAW-18 and JAW-21) and 1 on the southern (JAW-16), were installed into the uppermost portion of the Warsaw Formation to intercept the groundwater flow at the soil/bedrock interface 50 to 55 feet bgs. See Figure 6.4-3 for a fence diagram and Figures 6.4-4a through 6.4-4d for geologic profiles of shallow and bedrock wells.

Line 3A is located on an upland plateau which divides the Long Creek watershed and the Skunk River watershed. Groundwater flow in the shallow drift aquifer is topographically controlled in a circular pattern away from the site and flows north toward Long Creek tributaries and south toward Skunk River tributaries. The headwaters of 3 unnamed tributaries of Skunk River reach the southern perimeter of Line 3A. One tributary of Long Creek reaches the northern perimeter of the site. In the topographically higher areas shallow groundwater flow is radial, convergent toward the tributaries. As the groundwater nears the more permeable fluvial sediments of the tributaries, a more channel like flow is observed in the gradient.

Line 3A production facilities are aligned along the groundwater divide. Groundwater is perched in the drift aquifer by clay rich till. The till contains a high illite and dolomite content. The dolomite mineral matter fills the interstitial spaces, reducing the porosity of the low permeable clay. A vertical hydraulic conductivity of 5.2×10^{-9} cm/s was determined by laboratory analysis of soil extruded from a Shelby tube obtained from monitoring well JAW-20 at 20 to 22 feet bgs. Slug tests at Wells G-3 and G-7 had a average horizontal permeability of 8.4×10^{-5} cm/s. The thickness of the till unit ranged from 50 to 55 feet based on 3 monitoring wells drilled into the bedrock at Line 3A. The till unit was very homogenous throughout and exhibited a reduced unleached matrix as evidenced by visual classification and hydrochloric testing of continuous sampling.

At monitoring well location JAW-18, a small cavity was encountered at a depth of 51.2 feet bgs near the bedrock till interface. After encountering this opening and for the next 48 hours, gas was heard bubbling up through the groundwater. Visual inspection of the rock core found organics in relict bedding planes. It is presumed that a small confined methane gas seam was intercepted. The organics may have been associated with a buried soil horizon beneath the till unit.

The upper most bedrock intercepted is associated with the Warsaw Formation. Groundwater flow at the bedrock interface is structurally controlled by secondary porosity. Rock cores of the bedrock exhibited relict bedding planes with few vertical fractures. The groundwater flows in a planar manner along the dip of the bedrock. The upper bedrock in the region is deformed. A structural high known as the Skunk River Anticline lies south of the site. Groundwater levels in the deep monitoring wells indicate a northeast flow at the bedrock interface. The Skunk River anticline is aligned northwest to southeast.

6.4.1.2 Previous Investigations

No investigations prior to the JAYCOR PA/SI had been conducted at Line 3A.

6.4.2 Site Characterization

A PA was performed by JAYCOR at Line 3A in 1991. During the PA it was determined that there was a potential for contamination. As a result, an SI work plan was prepared

in June 1991 that detailed a limited sampling scheme to determine whether contamination was present in affected matrices as identified in the PA. The SI was initiated in August of 1991.

SI sampling of soils, sediments, and surface water concentrated on the buildings and associated drainage pathways historically recognized for storing, generating, or treating process waste. Eleven surface soil samples, 2 sediment samples, and 1 surface water sample were collected for analysis of explosives, metals, pesticides/PCBs, VOCs, and SVOCs. Results indicated the presence of metals and explosives in and around the production facility, in sediment samples, and explosives in surface water.

As a result of the SI findings, further investigation was scheduled under the RI. The RI sampling effort focused on determining the extent of metals and explosives contamination identified in the SI.

A 3-phase approach to the RI field effort was utilized at IAAP to refine project objectives as additional data about each site was accumulated. The Phase I field effort focused on surface and shallow subsurface soil sampling. Phase I tasks included soil gas screening, XRF screening for metals in soil, on-site analysis of soil samples for explosives, and soil, surface water, and sediment sampling. Phase I commenced 5 July 1992 and was completed 23 November 1992.

The Phase II field effort focused on at-depth soil sampling and monitoring well installation and sampling. Phase II commenced 12 April 1993, following a site reconnaissance with drilling subcontractors April 5 through 8, 1993.

The Follow-on sampling focused on verification of soil gas results, verification of the existence of lead in 2 bedrock wells, and verification of the absence of PCBs around the transformer storage pad. Follow-on sampling commenced 3 April 1995.

The sampling and analysis for all phases were conducted in accordance with the protocols presented in Appendix G of the QAPP submitted as Volume 3 of the Phase I RI work plan. The Soil Gas Investigation Report is included as Appendix B of this report.

The following sections detail the results of the RI activities. All samples collected at this site in association with the JAYCOR study are summarized in Line 3A Table 6.4-1 (following Section 6.4.4). Refer to the Line 3A Soils Map, Figure 6.4-5; the Line 3A Screening Maps, Figures 6.4-6a through -6d; and the Line 3A Groundwater/Surface Water/Sediment Sample Map, Figure 6.4-7, for all sample locations. Table 6.4-2 depicts all contaminants of concern reported above detection limits. All fixed laboratory results may be found in Appendix F; all screening results may be found in Appendix G.

6.4.2.1 Soils and Vadose Zone Sources and Contaminants of Concern

During the SI 11 soil samples were obtained at Line 3A. These samples contained metals and explosives around the above ground storage tank and in the area of the

transformer pad at Building 3A-70-1, along the southwest corner of melt Building 3A-05-01, at the loading docks of Buildings 3A-08-01, 3A-08-02, and 3A-06, around sump Building 3A-140-3, and along the north side of Building 3A-20-2, at Bay B.

As a result of the SI, 201 explosives screening samples (surface to 4.0 feet bgs), 173 metals screening samples (surface to 2 feet bgs), and 25 soil gas screening samples were collected. The screening study was concentrated around production buildings, loading docks and doors, and sumps. Twenty-two of the explosives screening samples, 20 of the metals screening samples, and 2 of the soil gas samples were sent to the fixed laboratory for confirmatory analysis.

During the independent sump survey, 2 sumps were targeted at Line 3A. Sump 20 is located on the north side of Building 3A-50-01, in shed 3A-140-3. Building 3A-50-1 is a TNT screening building where screening and inspection of explosives occurred. Waste water from weekly wash down of the equipment, ceilings, walls, and floors in Building 3A-50-1 was collected in the sump. The sump is 6 X 9 X 3 feet, with the top 14 inches above surface grade. An outfall pipe is located in its northwest corner. Surface and at-depth (34 inches) samples were obtained below the outfall and along the southeast corner of the sump. Samples were also obtained in a depression north of the outfall pipe. All samples were analyzed for explosives and metals and 2 of the at depth samples were analyzed for VOCs.

Sump 21 is located at Building 3A-50-02. This building was used as a location to screen for TNT. The sump is 6 X 9 X 3 feet, and the top is 8 inches above surface grade. There was no outfall pipe. Surface and at-depth samples (40 inches) were collected from along the southeast corner and north side of the sump. All samples were analyzed for metals and explosives. One of the at-depth samples was also analyzed for VOCs.

Soil gas screening was conducted at Building 3A-03-1 and Building 3A-03-2.

Continuous split spoon sampling was performed during the Phase II drilling activities at the site. The soils were logged lithologically so the subsurface conditions could be determined. Selected soil samples were collected from the split spoons and placed in a resealable bag for field analysis of volatile content utilizing a OVA or PID. The headspace analysis was used to screen samples to determine samples would be submitted for chemical analysis. No detectable levels of VOCs were indicated during the drilling activities. Soil samples collected from the soil/groundwater interface were submitted to the laboratory for explosives, metals, SVOC, and VOC analysis.

During the Follow-on sampling, soil samples were collected around Building 3A-70-1 to verify the absence of PCBs around this pad. Surface and collocated at-depth (3.0 feet bgs) samples were collected north (R04-SS-601), west (R04-SS-602), east (R04-SS-603), south (R04-SS-604), and topographically downgradient (southeast - R04-SS-605) of the pad and analyzed for PCBs.

6.4.2.2 Surface Water/Sediment Sources and Contaminants of Concern

During the SI 2 sediment and 1 surface water sample were obtained from Line 3A. Metals and explosives were detected in these samples. These samples were collected east of Building 3A-70-01, east of the road at the drainage pipe near the southeast corner of Building 3A-01, and the northeast corner of Building 3A-01.

Based on SI results, surface water sample R04-SW-02-01 was collected from within the utilities vault near Building 3A-02 during the RI and analyzed for explosives and metals. Two basewide surface water and 5 basewide sediment samples were also collected in the vicinity of Line 3A (RBW-SW/SD-94, RBW-SD-95, RBW-SD-96, RBW-SW/SD-11, RBW-SD-100).

6.4.2.3 Groundwater Sources and Contaminants of Concern

Five shallow and 3 deep groundwater monitoring wells were installed around the Line 3A Melt Buildings. Groundwater samples collected from these wells were analyzed for VOCs, SVOCs, metals, and explosives. Due to results from Phase II data, 2 of the deep wells were again analyzed for metals during the Follow-on sampling.

6.4.3 Nature and Extent of Contamination

Below is a discussion of the nature and extent of contamination found at Line 3A. Figures 6.4-8, 6.4-9a through -9d, 6.4-10, and 6.4-11 depict contaminants of concern and their appropriate contamination ranges for the fixed laboratory soil samples, screening soil samples, surface water and sediment samples, and groundwater samples, respectively, at Line 3A. Refer to these map during the following discussion.

6.4.3.1 Explosives

6.4.3.1.1 Soils.

Forty-nine soil samples were collected around Line 3A and analyzed for explosives by the fixed laboratory. 2,4,6-TNT and RDX were each detected in 21 samples at levels up to 19,000 and 11,000 $\mu\text{g/g}$, respectively. HMX was detected in 17 samples at levels up to 1700 $\mu\text{g/g}$; 1,3,5-TNB was detected in 13 samples at levels up to 21 $\mu\text{g/g}$; 2,4-DNT was detected in 7 samples at levels up to 13.2 $\mu\text{g/g}$; 1,3-DNB was detected in 2 samples at levels up to 0.61 $\mu\text{g/g}$; and 2,6-DNT and nitrobenzene were each detected in 1 sample at 1.3 and 2.41 $\mu\text{g/g}$, respectively. 2,4,6-TNT was the explosive with the highest reported value in 12 of 24 locations reporting detectable levels of explosives. RDX and HMX were the explosives with the highest reported values in 8 and 4 locations, respectively.

The majority of explosives were detected around Building 3A-05-1 and its associated buildings (3A-140-3, 3A-140-7 and 3A-70-1). Other buildings reporting explosives contamination are Buildings 3A-50-1, 3A-08-2, 3A-50-2, 3A-06, and 3A-08-1. Below is

a discussion of explosive fixed laboratory and screening results by building. See Figures 6.4-8, Soils Contamination, and 6.4-9a through -9d, Soils Screening Contamination, for locations and concentrations of explosives at Line 3A.

3A-05-1

Seven locations around Melt Building, 3A-05-1, and its associated buildings (3A-70-1, a filter building, and 3A-140-5 and 3A-140-7, pump houses) were analyzed by the fixed laboratory for explosives. All 7 of these locations reported detectable levels of explosives. Two locations reported levels of explosives greater than 1000 $\mu\text{g/g}$. One location reported explosives in the range of 500 to 1000 $\mu\text{g/g}$. Two locations reported explosives in the range of 100 to 500 $\mu\text{g/g}$, 1 location reported explosives in the range of 10 to 100 $\mu\text{g/g}$, and 1 location reported explosives levels less than 10 $\mu\text{g/g}$.

Explosives screening was also conducted in this area (nodes 001E and 700E): a total of 84 samples from 37 locations was collected. Thirteen of 24 locations west and south of the building between Buildings 3A-140-5 and 3A-140-7 reported detectable levels of explosives. Six of these locations had collocated samples collected at depth that did not report explosives. Explosives in the soils around this building appear to be limited to a distance of 48 feet west and 15 feet south and east.

Four of 13 locations collected southeast and east of Building 3A-70-1 reported detectable levels of explosives. None of these locations are within 64 feet of the building; all 4 locations are in the drainage ditches that run on each side of the road. Two of these locations were on the opposite side of the road from the building, indicating that explosives are migrating away from the melt building. All 4 locations had collocated samples collected at depth that did not contain detectable levels of explosives.

Building 3A-50-1

Six locations around this building and Building 3A-140-3 were analyzed by the fixed laboratory for explosives. All 6 locations reported detectable levels of explosives. 2,4,6-TNT was the explosive reported at the highest level at all 6 locations. Three locations reported explosives above 1000 $\mu\text{g/g}$; 1 reported explosives in the range of 100 to 500 $\mu\text{g/g}$; and the other 2 locations reported explosives levels less than 10 $\mu\text{g/g}$.

Twenty-one samples from 10 locations were collected and screened for explosives around the sump northeast of the building. Four of 10 locations reported detectable levels of explosives. Three of these locations are next to the sump and 1 is within 15 feet of the sump. Samples collected north, east, and west of these locations did not report detectable levels of explosives. Only 1 of these locations had a collocated sample collected at depth that did not report explosives. Explosives contamination appears to be aerially limited to a radius of 15 feet from the sump epicenter.

Building 3A-08-2

Two of 2 samples collected around this TNT service magazine and analyzed for explosives by the fixed laboratory reported detectable levels of explosives. Both samples were collected next to the loading dock. Six samples from 4 locations were

screened for explosives (node 500E). Only 1 location (R04-501E) contained explosives. This sample was also collected in front of the loading dock. Samples collected north, east, and west of this location did not report detectable levels of explosives.

Building 3A-50-2

One of the 5 fixed laboratory samples collected west of this TNT screening building contained explosives. This level of explosives was above 1000 $\mu\text{g/g}$. This sample was collected just northeast of the northeast face of Building 3A-140-4 and is a confirmatory sample for R04-801E discussed below. None of the fixed laboratory samples collected adjacent to sump #21 reported explosives.

A total of 9 samples from 5 locations was screened for explosives (node 800E). Two locations reported detectable levels of explosives. These samples were collected adjacent to the northeast face of Building 3A-140-4 and approximately 20 feet southwest of Building 3A-140-4. The levels of explosives adjacent to the building was greater than 130 $\mu\text{g/g}$. The level in the downgradient sample was less than 10 $\mu\text{g/g}$. Both samples had collocated samples collected at depth that did not report detectable levels of explosives. Samples collected north and west of these 2 locations did not report detectable levels of explosives. Contamination appears to be limited to 20 feet southwest of the building and 10 feet northeast of the building.

Building 3A-20-2

One of the 2 fixed laboratory samples collected at the loading dock of this black powder pellet building and analyzed for explosives reported explosives in the range of 10 to 100 $\mu\text{g/g}$. This sample was collected during the SI and 2,4,6-TNT was the explosive reported at the highest level. A total of 6 samples from 4 locations was screened for explosives (node 400E) around this building's loading dock. None of these samples reported detectable levels of explosives (including the fixed laboratory confirmatory sample). Explosive contamination at this building appears to be limited to 5 feet from the loading dock.

Building 3A-06

SI sample, 04-SS-08, collected at the loading dock of the ammonium nitrate service magazine, reported levels of explosives less than 1.0 $\mu\text{g/g}$. A total of 12 samples from 7 locations (node 200E) was collected around the loading dock and doorways at the building and screened for explosives. Three locations, all collected between the road and the railroad tracks reported explosives. Only 1 of the locations had a collocated sample collected at depth that did not contain explosives; the other 2 locations did not have collocated at depth samples collected. Samples collected north, west, and east of these locations did not contain explosives. Contamination appears to be located between the road and railroad tracks in a 20-foot line.

Building 3A-08-1

One of 2 fixed laboratory samples collected around this building, a TNT service magazine, and analyzed for explosives by the fixed laboratory reported detectable levels of explosives in the range of 10 to 100 $\mu\text{g/g}$. This sample was collected in a ditch at the northeast corner of the loading dock. RDX was the explosive reported with the highest value. A total of 8 samples from 6 locations was screened for explosives around the loading dock (node 100E). Only 1 location, collected in the same area as the SI sample (R04-102E) reported detectable levels of explosives. Samples collected north, east, and west of this location did not report detectable levels of explosives. The collocated at depth sample did not report detectable levels of explosives.

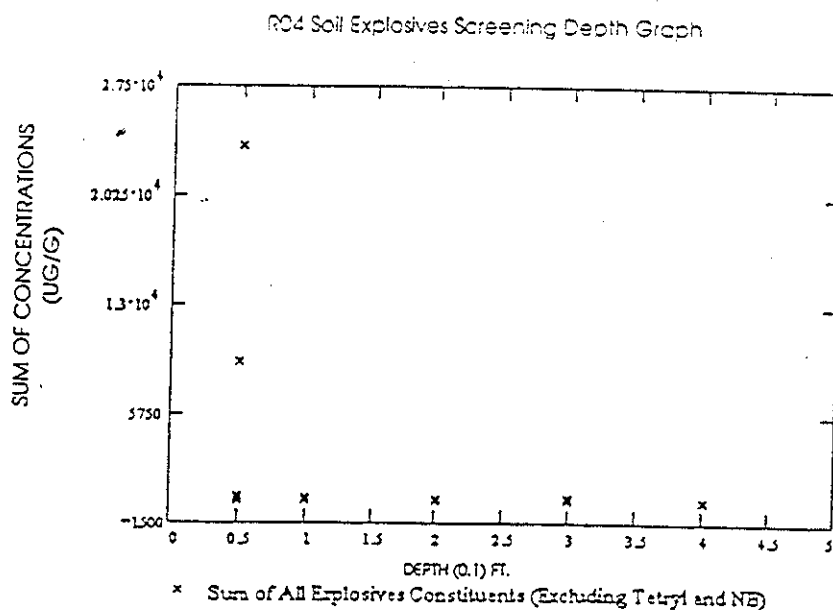
Building 3A-05-2

Explosives screening samples from 28 locations (node 1000E) were collected north and northwest of this melt building around its support buildings and drainage pathways. Four samples reported detectable levels of explosives. Three of these sample locations are around the blast wall northeast of Building 3A-10-5. The other sample location is just northeast of Building 3A-99-8. None of the levels exceeded 100 $\mu\text{g/g}$.

Concrete Vault

A total of 12 samples from 8 locations was screened for explosives (node 600) at the southeast corner of the line in the drainage ditch. None of the locations reported detectable levels of explosives.

The graph below depicts the trend for explosives concentrations to decrease with depth.



SI data, Phase I fixed laboratory and explosives screening data, and the sump investigation data indicate explosives contamination at Line 3A is associated with the melt building, sumps, production and storage building, NPDES permitted discharges, and loading areas. The levels of detectable contaminants decreases with distance from the identified source areas such as sumps and loading areas.

6.4.3.1.2 Surface Water and Sediment

A total of 4 surface water and 7 sediment samples was collected by JAYCOR at Line 3A and analyzed for explosives. Sample 04-SW-14 was collected during the SI in the northeastern area of the line in a unidentified structure and reported levels of explosives less than 10 $\mu\text{g/L}$ (1.14 $\mu\text{g/L}$). Sample R04-SW-02 was collected from the same location during Phase I of the RI and did not report detectable levels of explosives.

Sample RBW-SD-95 was obtained from along the discharge culvert of industrial wastewater treatment Building 3A-70-1. This sample reported RDX at 14,000 $\mu\text{g/g}$. Other explosives detected in this sample and their concentration ranges include: 1,3,5-TNB (500-1000 $\mu\text{g/g}$); 1,3-DNB (<10 $\mu\text{g/g}$); 2,4,6-TNT (< 10 $\mu\text{g/g}$); 2,4-DNT (<10 $\mu\text{g/g}$); 2,6-DNT (< 10 $\mu\text{g/g}$); and HMX (> 2000 $\mu\text{g/g}$). Sample 04-SD-01, collected approximately 160 feet southeast (downgradient) of this sample, reported levels of explosives in the range of 100 to 500 $\mu\text{g/g}$. These elevated concentrations are most likely the result of buildup of residual material in the low lying areas of the discharge culvert over time. Explosives screening conducted in this area also detected explosives in the drainage ditches southeast of this building.

Samples RBW-SW/SD-11 were collected from the drainage ditch flowing southeast of Line 3A on the opposite side of I Road from the Line. Neither sample reported detectable levels of explosives.

Sample RBW-SD-100 was obtained from along the discharge culvert adjacent to industrial wastewater treatment Building 3A-70-2. This sample reported levels of explosives in the range of 10 to 100 $\mu\text{g/g}$. The presence of these constituents at this location is most likely the result of residual buildup in low lying areas along the drainage area. Explosives were not detected in Samples RBW-SW/SD-94-01, located over 1000 feet south-southwest of this sample (downgradient) indicating explosives contamination is not migrating off-site at this location.

Explosives were not detected in Sample RBW-SD-96-01 located at the northern fenceline of Line 3A indicating that explosives are not migrating off site at this location.

NPDES permit #29-00-9-00 covers IAAP discharges: outfalls 004A and 004 are at Line 3A. Outfall Serial No. 034 (004A) is a discharge which results from LAP operations. It consists of explosive contaminated wastewater that has been processed through carbon filter columns (at Building 3A-70-2). Discharge is to a tributary of the Skunk River. Outfall Serial No. 035 (004) is also a discharge which results from LAP operations. It consists of wastewater that has been processed through carbon filter columns (at Building 3A-70-1). Discharge is to an intermittent creek that flows for approximately 1 mile and joins Long Creek. Outfall Serial No. 014 (3A STP Outfall) is

a discharge that contains treated effluent consisting of domestic wastes from the Process Line 3A, and the blowdown water from the steam generating plant near Line 3A (Building 3A-02). The treatment facility consists of an Imhoff tank, a trickling filter, a secondary clarifier, a chlorine contact chamber, and sludge drying beds. Discharge is to an unnamed tributary of the Skunk River. The Line 3A Sewage Treatment Plant (STP) is a separate site discussed in detail in Section 6.21. The IAAP is permitted by the IDNR to discharge some explosives via NPDES outfalls. At Line 3A the NPDES-permitted monthly average for TNT is 500 $\mu\text{g/L}$; for RDX and HMX the monthly average is 2,000 $\mu\text{g/L}$. Explosive levels were greatest at the areas of permitted discharge.

During periods of heavy or consistent precipitation, near-surface storm flow may transport sediment toward Long Creek and the Skunk River.

Fixed laboratory results from the surface water/sediment samples collected from drainage ditches around Line 3A indicate explosives in sediment samples collected near outfalls with concentrations decreasing downgradient from the discharge. The ditches are frequently dry and flow only during precipitation events. Line 3A is currently active, and discharge from these NPDES outfalls is at times the sole source of water. This water could be expected to collect in low lying areas of the ditches, allowing suspended sediment to settle out. When flow is present in the ditches, the water may mobilize these sediment contaminants, causing further downgradient contamination.

6.4.3.1.3 Groundwater

Five shallow wells (JAW-15, JAW-17, JAW-19, JAW-20, and JAW-22) and 3 deep wells (JAW-16, JAW-18, and JAW-21) were installed at Line 3A. Explosives were reported in 5 wells. Levels of explosives in wells JAW-20, JAW-17 and JAW-15 were in the range of 10 to 100 $\mu\text{g/L}$. Levels in the deep well JAW-16 and shallow well JAW-19 were less than 10 $\mu\text{g/L}$ (1.64 and 3.09 $\mu\text{g/L}$, respectively).

Probable sources include wastewater discharge areas and percolation of surface contaminants confirmed to exist in soils to depths of up to 3 feet around production buildings and loading dock areas. Explosive contaminated groundwater has been identified as a possible source of explosives reaching the Line 3A STP, which was investigated as a separate site (R21). Groundwater infiltration of the aged sewer mains as well as the lines acting as a conduit have been identified as a possible source of the explosives reaching the STP.

6.4.3.2 Metals

6.4.3.2.1 Soils

A total of 50 soil samples was collected around Line 3A and analyzed for metals by the fixed laboratory. Barium and lead were detected in all 50 samples at levels up to 341 and 1710 $\mu\text{g/g}$, respectively. Arsenic was detected in 49 samples at levels up to 15 $\mu\text{g/g}$, chromium was detected in 48 samples at levels up to 223 $\mu\text{g/g}$, silver was detected in 15 samples at levels up to 370 $\mu\text{g/g}$, mercury and selenium were each detected in 13 samples at levels up to 4 and 2.53 $\mu\text{g/g}$ respectively, and cadmium was detected in 12 samples at levels up to 8.42 $\mu\text{g/g}$.

The areas with the highest metals levels are the Building 3A-05-1 area and the area northwest of Building 3A-05-2. Other areas associated with metals contamination include Buildings 3A-08-2, 3A-06 and 3A-50-2. All of these areas are discussed below. See Figures 6.4-8 and 6.4-9a through -9d for locations and concentration ranges of metals above 100 $\mu\text{g/g}$ at Line 3A.

Building 3A-05-1

Seven samples around Melt Building, 3A-05-1, and its associated buildings (3A-70-1, a filter building, and 3A-140-5 and 3A-140-7, pump houses) were analyzed by the fixed laboratory for metals. Four of these locations reported levels of metals above 100 $\mu\text{g/g}$. One location reported metals levels above 1000 $\mu\text{g/g}$. The other 3 locations reported levels of metals in the range of 100 to 500 $\mu\text{g/g}$.

A total of 33 samples from 19 locations was screened for metals south and southwest of the melt building. Ten locations reported levels of metals greater than 100 $\mu\text{g/g}$. See Figure 6.4-9b for locations. Six of these locations had collocated samples collected at depth that did not report levels of metals of concern greater than 100 $\mu\text{g/g}$.

Building 3A-50-1

Seven samples were collected around this building (and 3A-140-3) and analyzed by the fixed laboratory for metals. Two of these samples reported levels metals greater than 100 $\mu\text{g/g}$. Lead was the metal reported at the highest level and was within the range of 100 to 500 $\mu\text{g/g}$.

Building 3A-05-2

Twelve locations north and northwest of Melt Building 3A-05-2, and its associated buildings (3A-99-1, 3A-99-8, 3A-10-5, and 3A-70-2) were analyzed by the fixed laboratory for metals. Five locations reported levels of metals greater than 100 $\mu\text{g/g}$. All 5 locations are in drainage ditches north of the building. Four of these locations, northwest of Building 3A-99-5, reported high levels of silver (140 to 370 $\mu\text{g/g}$).

A total of 71 samples from 36 locations was screened for metals north and northwest of this building (node 1000). Ten locations reported levels of metals above 100 $\mu\text{g/g}$. Silver, lead, and copper were the metals with the highest reported values in these locations. Silver and copper appear to be migrating away from Building 3A-99-8, both to the northwest and to the southeast in the ditches on both sides of the road. Samples that were not collected in the drainage ditches generally did not report metals levels above 100 $\mu\text{g/g}$. It should be noted that screening sample R04-410M, collected in association with Building 3A-08-2, but in the drainage ditch approximately 500 feet northwest of Building 3A-99-8 reported a level of silver at 119 $\mu\text{g/g}$ at the surface and 2.99 $\mu\text{g/g}$ at 1.0 foot bgs.

Building 3A-08-2

Four soil samples collected north of Building 3A-08-2 were analyzed by the fixed laboratory for metals. Two of these locations reported metals levels above 100 $\mu\text{g/g}$. Both samples were collected next to the loading dock. A total of 19 samples from 11 locations (node 400) was screened for metals around this loading dock. Six locations

reported levels of metals above 100 $\mu\text{g/g}$. Three of these locations were in front of the loading dock. Two other locations are adjacent to the road, southeast of the building. The other location (R04-410M), collected approximately 350 feet northwest of the building in a drainage ditch, reported high levels of silver (see discussion above). Four of the 6 locations had collocated samples collected at depth that did not report levels of metals greater than 100 $\mu\text{g/g}$.

Building 3A-06

SI Sample 04-SS-08, collected at the loading dock of the ammonium nitrate service magazine, reported levels of metals in the range of 100 to 500 $\mu\text{g/g}$. A total of 5 samples from 4 locations was collected around the loading dock and screened for metals (node 300M). All 4 locations reported levels of metals greater than 100 $\mu\text{g/g}$. Only 1 collocated at-depth sample was collected at this building, and this sample reported levels of metals above 100 $\mu\text{g/g}$.

Building 3A-50-2

One sample from a total of 3 locations collected west of this building and analyzed by the fixed laboratory for metals reported metals levels above 100 $\mu\text{g/g}$ (in the range of 100 to 500 $\mu\text{g/g}$). A total of 27 samples from 13 locations was screened for metals west of Building 3A-50-2 and around Building 3A-140-4. Five locations reported levels of metals above 100 $\mu\text{g/g}$. Four of these locations had collocated at depth samples that did not report levels of metals greater than 100 $\mu\text{g/g}$. It should be noted that the surface sample at location, R04-811M, collected in the ditch north of the building, reported low levels of silver. The other 4 locations were all within a radius of 15 feet of Building 3A-140-4.

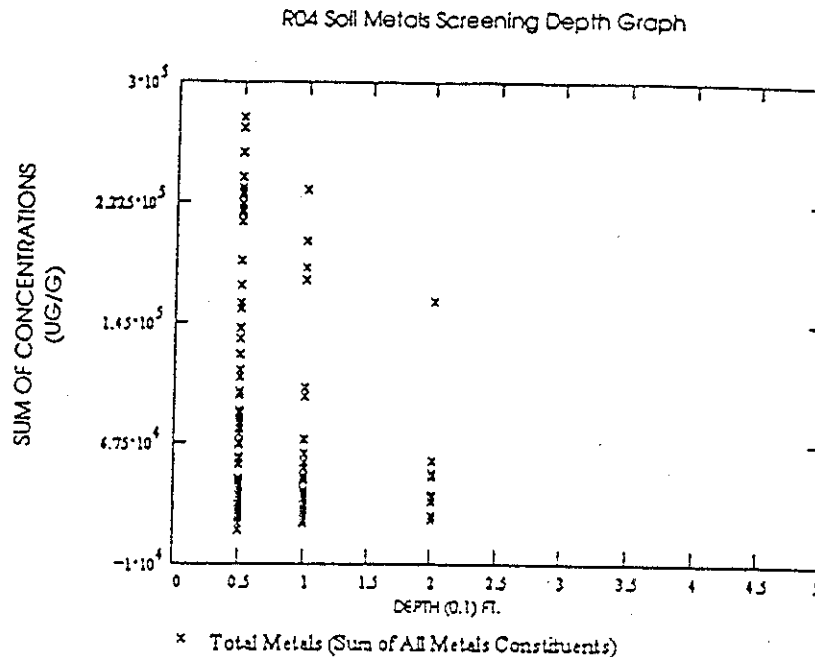
Building 3A-08-1

One soil sample, collected north of Building 3A-08-1 next to the loading dock, was analyzed by the fixed laboratory for metals. This sample, collected during the SI, did not report levels of metals greater than 100 $\mu\text{g/g}$. A total of 6 samples from 4 locations (node 200) was screened for metals around this loading dock. Three locations reported levels of metals above 100 $\mu\text{g/g}$. All 3 of these locations were collected in front of the loading dock. Two of these locations had collocated samples collected at depth that did not report levels of metals above 100 $\mu\text{g/g}$.

Concrete Vault

A total of 10 samples from 7 locations was screened for metals (node 600) at the southeast corner of the line in the drainage ditch. Five locations reported metals levels greater than 100 $\mu\text{g/g}$. Copper and lead were the metals with the highest concentrations. Only 1 of these locations had a collocated sample that did not report levels of metals greater than 100 $\mu\text{g/g}$; collocated, at-depth samples were not collected at the other 4 locations.

The following graph depicts the trend for metals concentrations to decrease with depth.



SI and Phase I fixed laboratory data, Phase I RI metals screening data, and the sump investigation data indicate metals contamination at Line 3A is associated with the melt buildings, sumps, production and storage building, NPDES permitted discharges, and loading areas. The screening study indicates that elevated metals levels extend more than 200 feet from the melt buildings, in the ditches, to a depth of up to 3 feet as indicated in the depth graphs above. The levels of detectable contaminants decreases with distance from the identified source areas such as sumps and loading areas. The screening conducted at loading dock areas of Buildings 3A-06, 3A-08-1, and 3A-08-2 indicates localized metals contamination in surficial soils around the loading docks.

6.4.3.2.2 Surface Water and Sediment

A total of 3 surface water and 7 sediment samples was collected by JAYCOR at Line 3A and analyzed for metals by the fixed laboratory. Sample R04-SW-02 was collected from an unnamed structure in the northeastern corner of the site. This sample reported metals levels in the range of 10 to 100 $\mu\text{g/L}$. Sample 04-SD-13 was collected at a drainage grate pipe near the southeast corner of Building 3A-01. This sample reported levels of metals in the range of 100 to 500 $\mu\text{g/g}$. Soils metals screening conducted at these locations reported copper and lead in the soils around these areas.

Sample RBW-SD-95 was obtained from the discharge culvert of industrial wastewater treatment Building 3A-70-1. This sample reported levels of metals in the range of 10 to 100 $\mu\text{g/g}$. Chromium was the metal reported with the highest value. Sample 04-SD-01, collected approximately 160 feet southeast (downgradient) of this sample, also

reported levels of metals in the range of 10 to 100 $\mu\text{g/g}$. Chromium was also the metal reported with the highest value in this sample. Metals screening conducted in this area also detected metals in the drainage ditches southeast of this building.

Sample RBW-SD-11 was collected from the drainage ditch flowing southeast from Line 3A on the opposite side of I Road from the Line and reported metals in the range of 10 to 100 $\mu\text{g/g}$ (arsenic at 9.35 $\mu\text{g/g}$ and lead at 20.0 $\mu\text{g/g}$). No metals of concern were reported in the corresponding surface water sample.

Sample RBW-SD-100 was obtained from the discharge culvert adjacent to industrial wastewater treatment Building 3A-70-2. This sample reported metals levels in the range of 10 to 100 $\mu\text{g/g}$.

Metals were also reported in this range in Sample RBW-SD-94-01, located over 1000 feet south-southwest of this sample (downgradient). Silver was reported at 27 $\mu\text{g/g}$. The corresponding surface water sample reported metals levels less than 10 $\mu\text{g/g}$; silver was detected at 4.67 $\mu\text{g/L}$. The duplicate water sample collected at this location reported similar results. This would indicate that the silver detected in the screening samples north of Building 3A-05-2 is migrating off site south of the line.

Metals were detected in Sample RBW-SD-96-01 located at the northern fenceline of Line 3A at levels in the range of 10 to 100 $\mu\text{g/g}$. Lead was the metal reported at the highest value. Silver was reported in this sample at a level less than 1.0 $\mu\text{g/g}$.

NPDES discharges from Line 3A melt buildings appear to be contributing to off-site surface water/sediment contamination. During periods of heavy or consistent precipitation, near-surface storm flow may transport sediment toward Long Creek and the Skunk River.

6.4.3.2.3 Groundwater

Metals above detection limits were reported in all 7 wells. Lead and chromium are the metals with the highest reported concentrations in all but 1 well (JAW-20 contained selenium at 3.3 $\mu\text{g/L}$). Table 6.4-2 depicts all metals of concern above detection limits for these 7 wells. None of the metals levels detected in any of the wells exceeded 55 $\mu\text{g/L}$.

Lead was reported in 2 of the deep wells (JAW-16 and JAW-21) during Phase II at levels above the maximum concentration limits (MCLs) for lead of 15.0 $\mu\text{g/L}$. These 2 wells were sampled again during the Follow-on sampling to verify these lead results. Neither lead nor chromium were detected in these wells at this time. The presence of lead in a sample can be attributed to a contaminated aquifer, cross contamination during sampling or sample handling, sample container handling, dusty conditions during sampling, etc. The lack of lead contamination in the Follow-on data can only mean that there was no lead in that sample at that time. This would suggest that lead is not present in the aquifer and that the first round of samples during Phase II were contaminated by other means.

6.4.3.3 SVOCs and VOCs

6.4.3.3.1 Soils

Soil gas screening was conducted at Building 3A-03-1 and Building 3A-03-2. The soil gas screening conducted at Building 3A-03-02 contained no levels of Total VOCs at this location. The soil gas survey conducted at Line 3A (R04) near storage building 3A-03-1, detected VOCs in 4 of the 16 sample locations (3 samples had detectable contamination with 1 sample showing visual evidence). On-site GC analytical results revealed 6,486 $\mu\text{g/L}$ of TVOC in sample #11. Further details on the soil-gas surveys may be found in the soil-gas screening report submitted as Appendix B. During the Follow-on sampling, 2 soil samples were collected to verify soil gas results. Sample R04-SA-606 was collected at soil gas survey point R04-11 (at 5.0 feet bgs), where 6486 ppb TVOCs were reported. Sample R04-SA-607 was collected at soil gas survey point R04-08 (at 5.0 feet bgs), where 3 ppb TVOCs were reported. Neither of these samples reported detectable levels of VOCs.

Building 3A-03-1 is a solvent storage building. Any VOC contamination in the area would be from incidental spills during handling or building clean-up. A waste stream is not generated in this building, and therefore if contamination exists, it may be in small amounts that are not concentrated to one area (i.e., ditch). It may be difficult to determine the best areas to sample with an inconsistent source as described. As discussed previously, since the soil samples did not detect contamination in the areas where the soil gas survey suggested contamination, this area will be evaluated under the Groundwater FS. Extraction wells may be installed that would capture contaminants.

Only one sample collected during the RI at Line 3A reported SVOCs. Sample 04-SS-12 reported bis(2-ethylhexyl)phthalate at 6.2 $\mu\text{g/g}$.

None of the 17 soil samples analyzed by the fixed laboratory, collected within Line 3A, reported detectable levels of VOCs. Neither of the samples collected during the Follow-on sampling event to confirm results from soil gas location 11, collected between 3-03 and 3-04 and soil gas location 8, collected south of 3-03, reported detectable levels of VOCs. SVOCs and VOCs in soils do not appear to be significant at Line 3A.

6.4.3.3.2 Surface Water/Sediment

SVOCs were only detected at 2 locations in the Line 3A surface water/sediment samples. Samples RBW-SD-95 and RBW-SD-100, both collected at NPDES discharges, reported levels of SVOCs less than 10 $\mu\text{g/g}$. These levels may be a result of NPDES activities.

6.4.3.3.3 Groundwater

During Phase II, VOCs were detected in 4 groundwater samples at Line 3A. TCE was reported at 3.0 $\mu\text{g/L}$ in Well JAW-15 and chloroform was reported at 1.4, 0.48, and 0.98 $\mu\text{g/L}$ in Wells JAW-17, JAW-20, and JAW-21. Chloroform was not reported in the trip blanks collected during the Phase II sampling.

6.4.3.4 PCBs

6.4.3.4.1 Soils

During the Follow-on sampling, soil samples were collected around Building 3A-70-1 to verify the absence of PCBs around this pad. Surface and collocated at-depth (3.0 feet bgs) were collected north (R04-SS-601), west (R04-SS-602), east (R04-SS-603), south (R04-SS-604), and topographically downgradient (southeast - R04-SS-605) of the pad analyzed for PCBs and analyzed for PCBs. None of these samples reported PCBs above detection limits.

6.4.3.4.2 Surface Water and Sediment

PCBs were detected in Sample RBW-SD-100, collected at the NPDES discharge point at Building 3A-05-2, at levels less than 10 $\mu\text{g/g}$.

6.4.4 Deviations from Work Plan

Sample R04-SW-01, which was proposed to be located approximately 50 feet west of 3A-70-1, was not collected because there was no water present at the time of sampling.

Sample R04-GP-03, which was proposed in the Work Plan to be collected in the same location as 04-SS-08, was not collected because the Geoprobe could not access the sample location.

Sample R04-GP-04, which was proposed in the Work Plan to be collected in the same location as R04-104, was not collected because the Geoprobe could not access the sample location.

Sample R04-600M, which was to be located at sample point 04-SW-14, was collocated with sample R04-600M.

Sample R04-800M is an additional sampling grid located at SU21-SS-02.

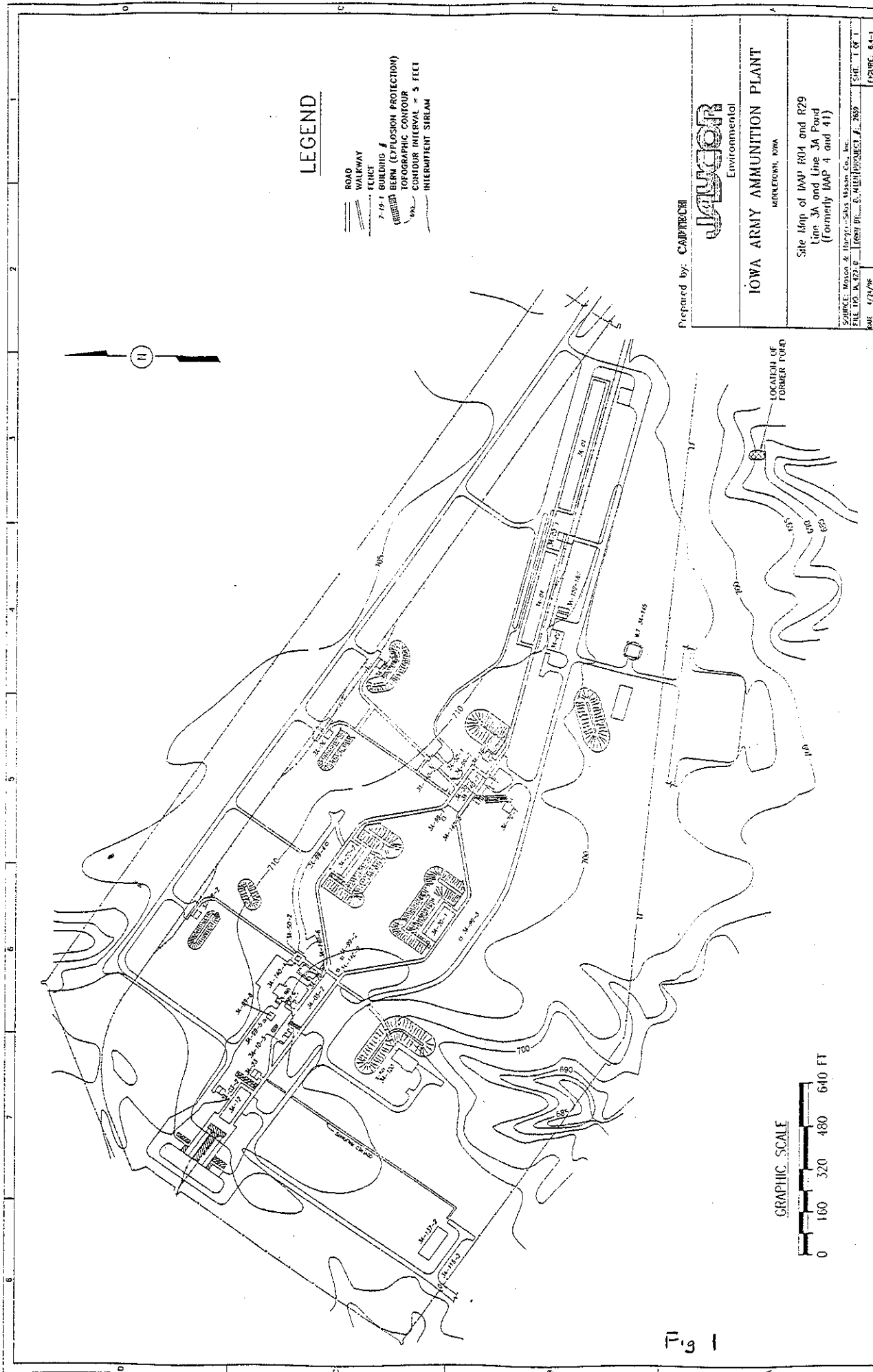
Sample R04-900E is an additional sampling grid located at SU21-SS-01.

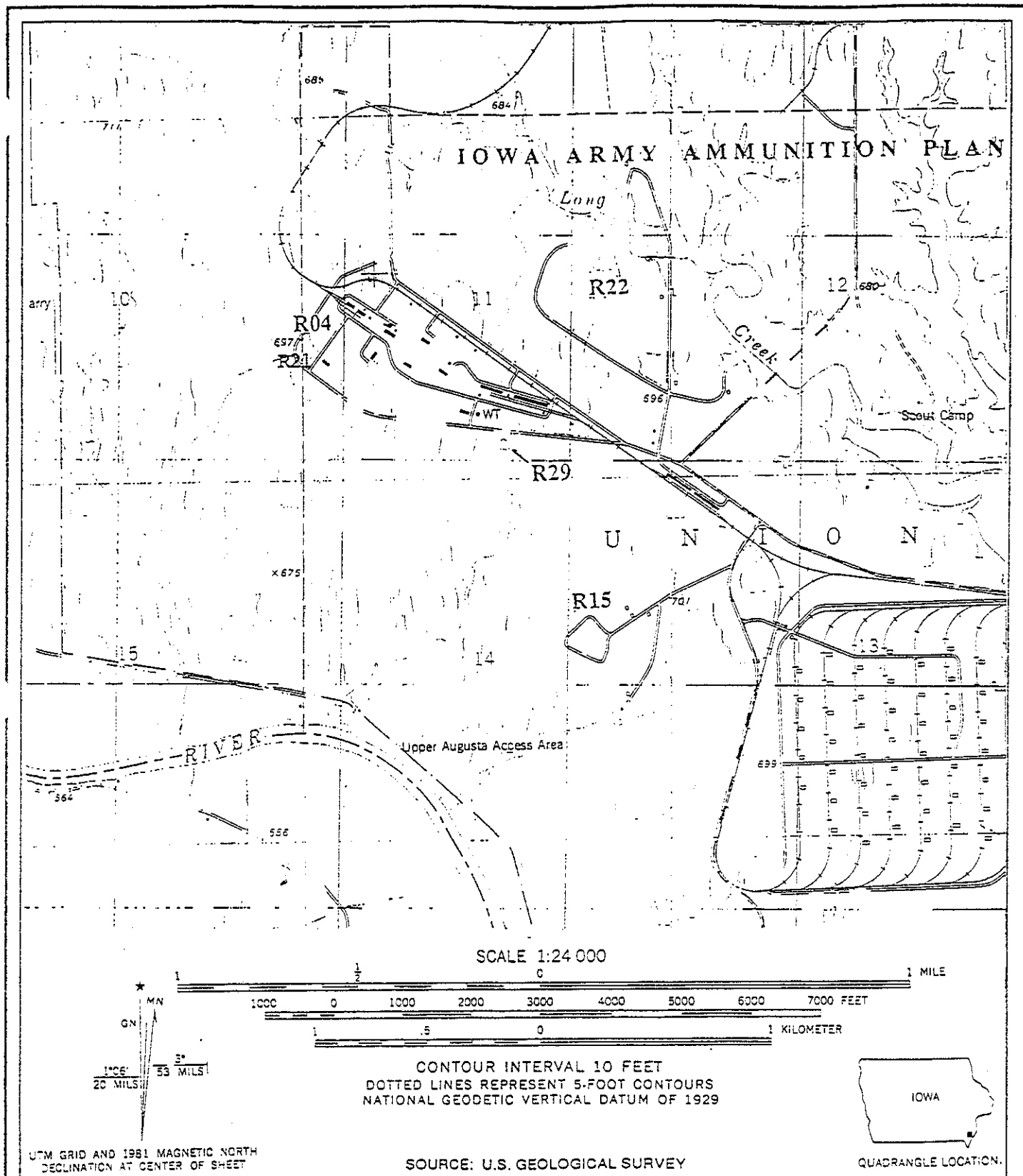
Sample R04-1000 is an additional sampling grid located west of the X-Ray building next to Building 3A-05-2.

Sample R04-800E is an additional sampling grid located at SU21-SS-02.

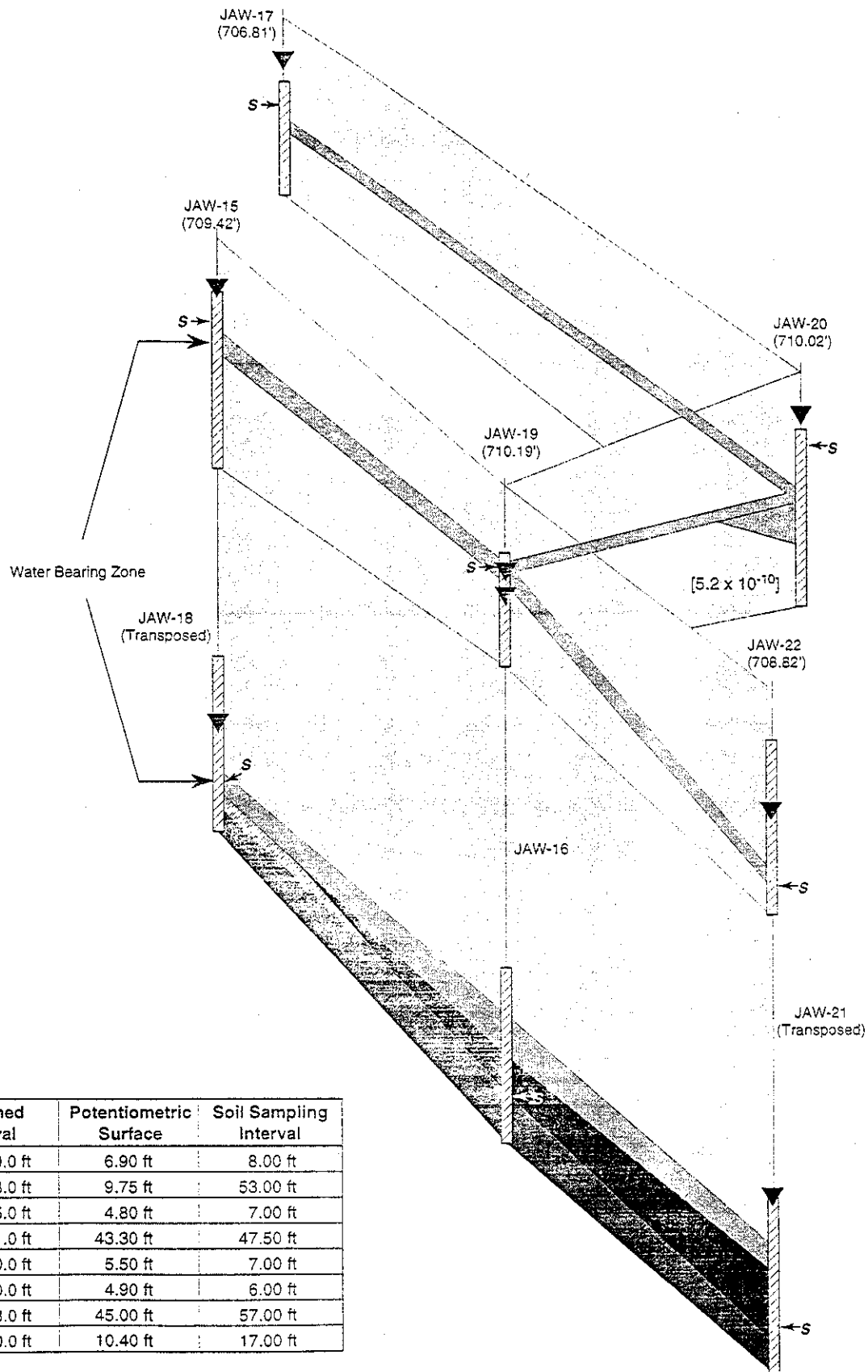
Sample R04-900E is an additional sampling grid located at SU21-SS-01.

Sample R04-1000E is an additional sampling grid located west of the X-Ray building next to Building 3A-05-2.

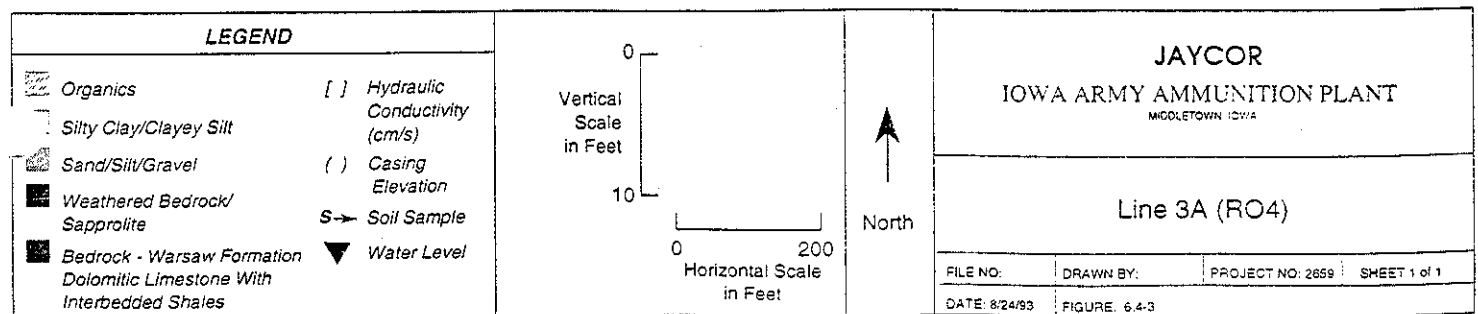


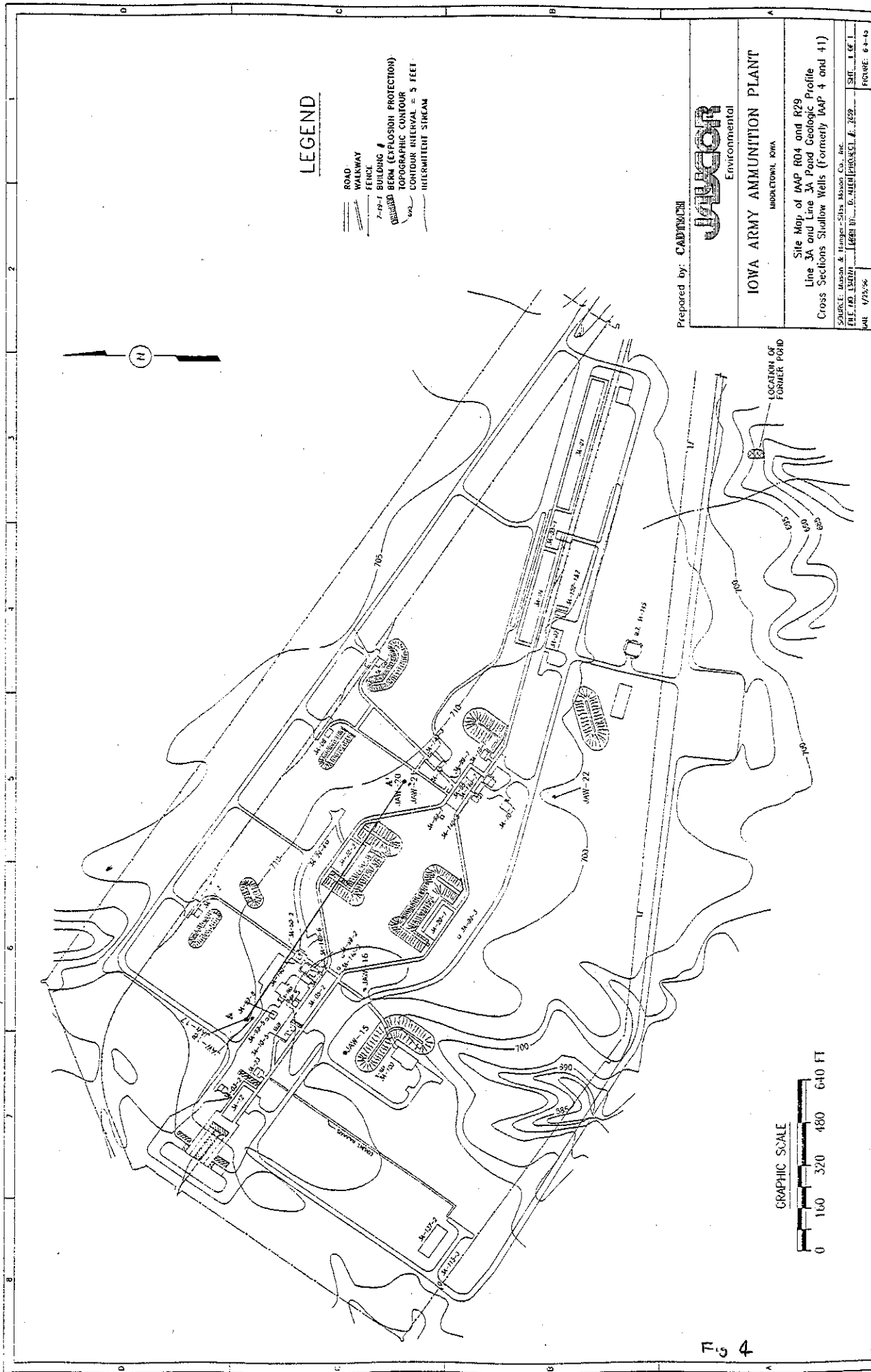


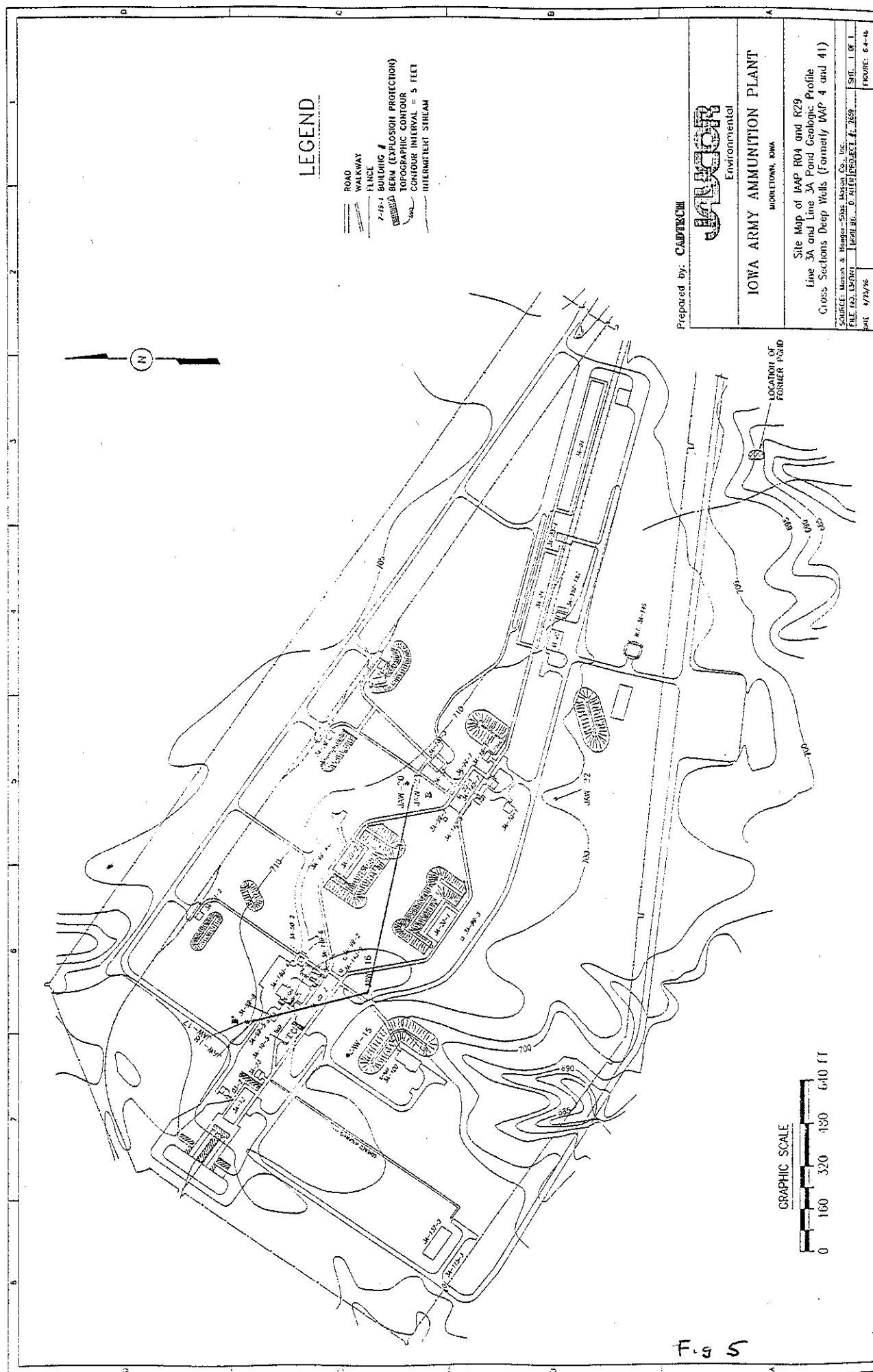
| | | | | | | |
|--------------------------------|----------|---------|-------------------|----------|---|--------------|
| JAYCOR Environmental | DATE | 1981 | SCALE | 1:24 000 | TITLE SITE LOCATION MAP | |
| | DRAWN BY | U.S.G.S | APPROVED BY | B. McG. | Line 3A STP (R21) | |
| | JOB NO. | 2659-13 | DWG. NO./REV. NO. | 1 | Line 3A (R04), Demolition Area (R15), Firing Site (R22), Line 3A Pond (R29) | |
| | | | | CLIENT | AEC | FIGURE 6.4-2 |

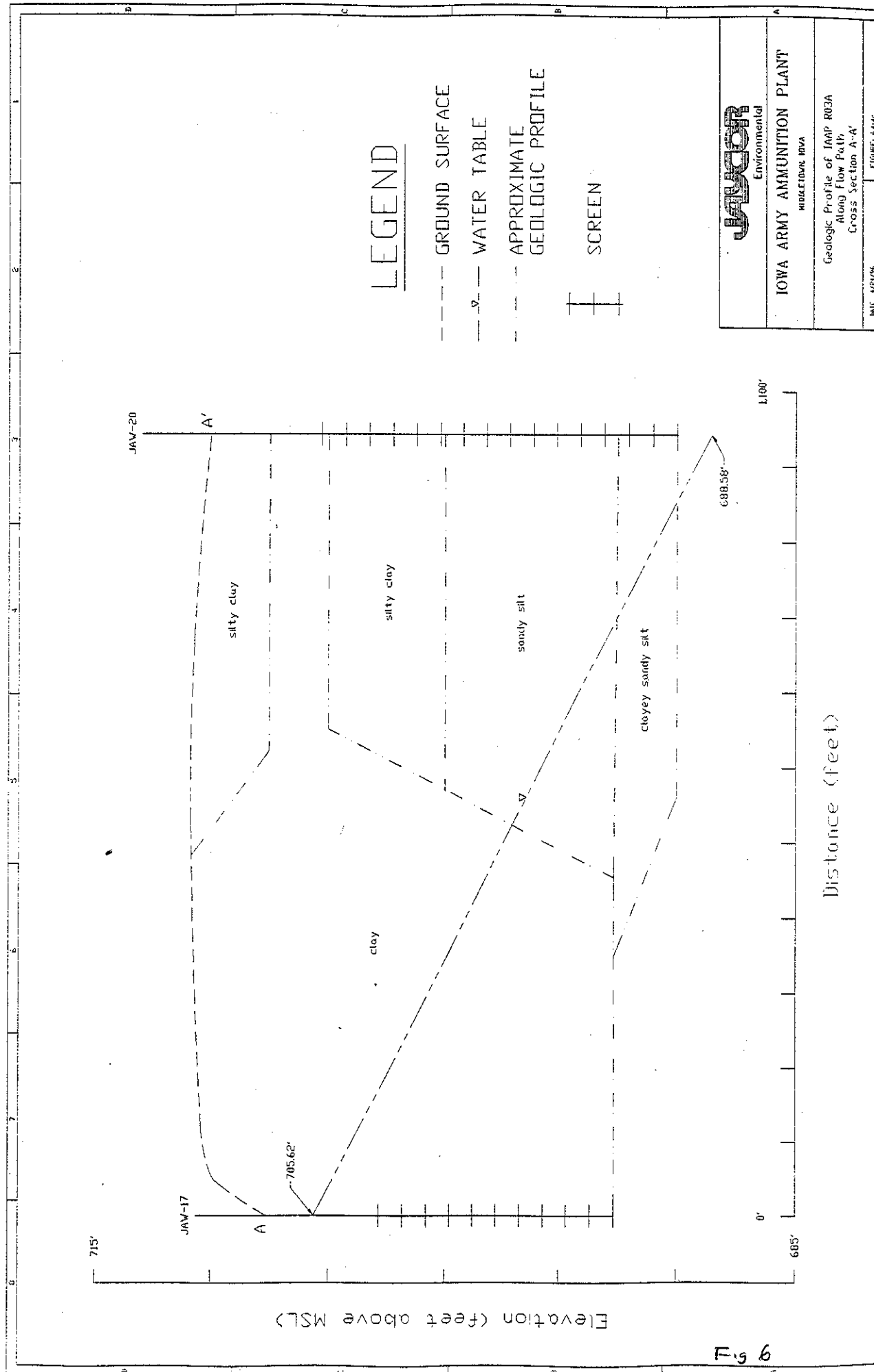


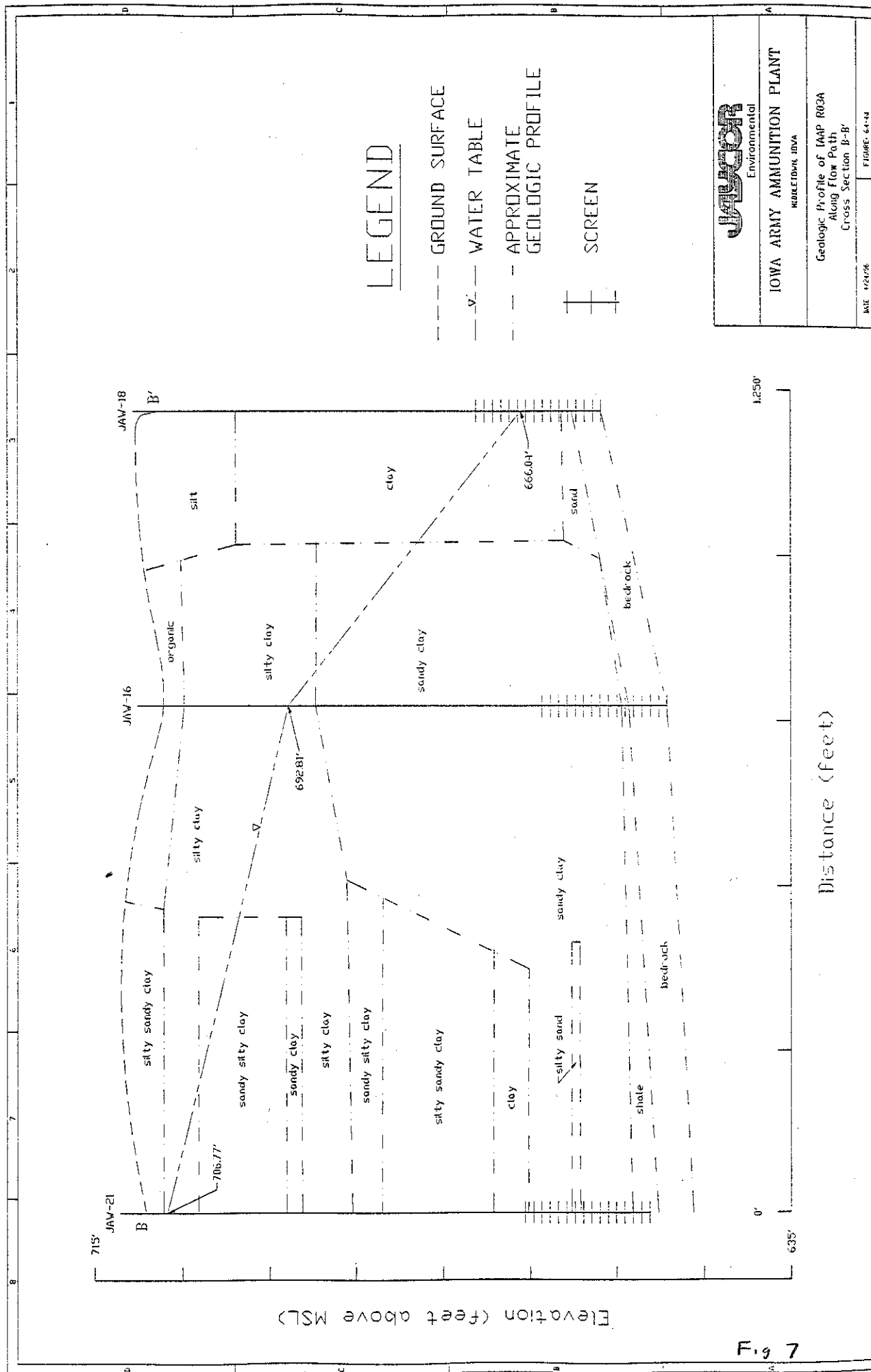
| Well # | Total Depth | Screened Interval | Potentiometric Surface | Soil Sampling Interval |
|--------|-------------|-------------------|------------------------|------------------------|
| JAW-15 | 20.0 ft | 5.0 - 20.0 ft | 6.90 ft | 8.00 ft |
| JAW-16 | 58.0 ft | 43.0 - 58.0 ft | 9.75 ft | 53.00 ft |
| JAW-17 | 15.0 ft | 5.0 - 15.0 ft | 4.80 ft | 7.00 ft |
| JAW-18 | 51.2 ft | 36.0 - 51.0 ft | 43.30 ft | 47.50 ft |
| JAW-19 | 15.0 ft | 5.0 - 10.0 ft | 5.50 ft | 7.00 ft |
| JAW-20 | 20.0 ft | 5.0 - 20.0 ft | 4.90 ft | 6.00 ft |
| JAW-21 | 58.2 ft | 43.0 - 58.0 ft | 45.00 ft | 57.00 ft |
| JAW-22 | 20.0 ft | 5.0 - 20.0 ft | 10.40 ft | 17.00 ft |

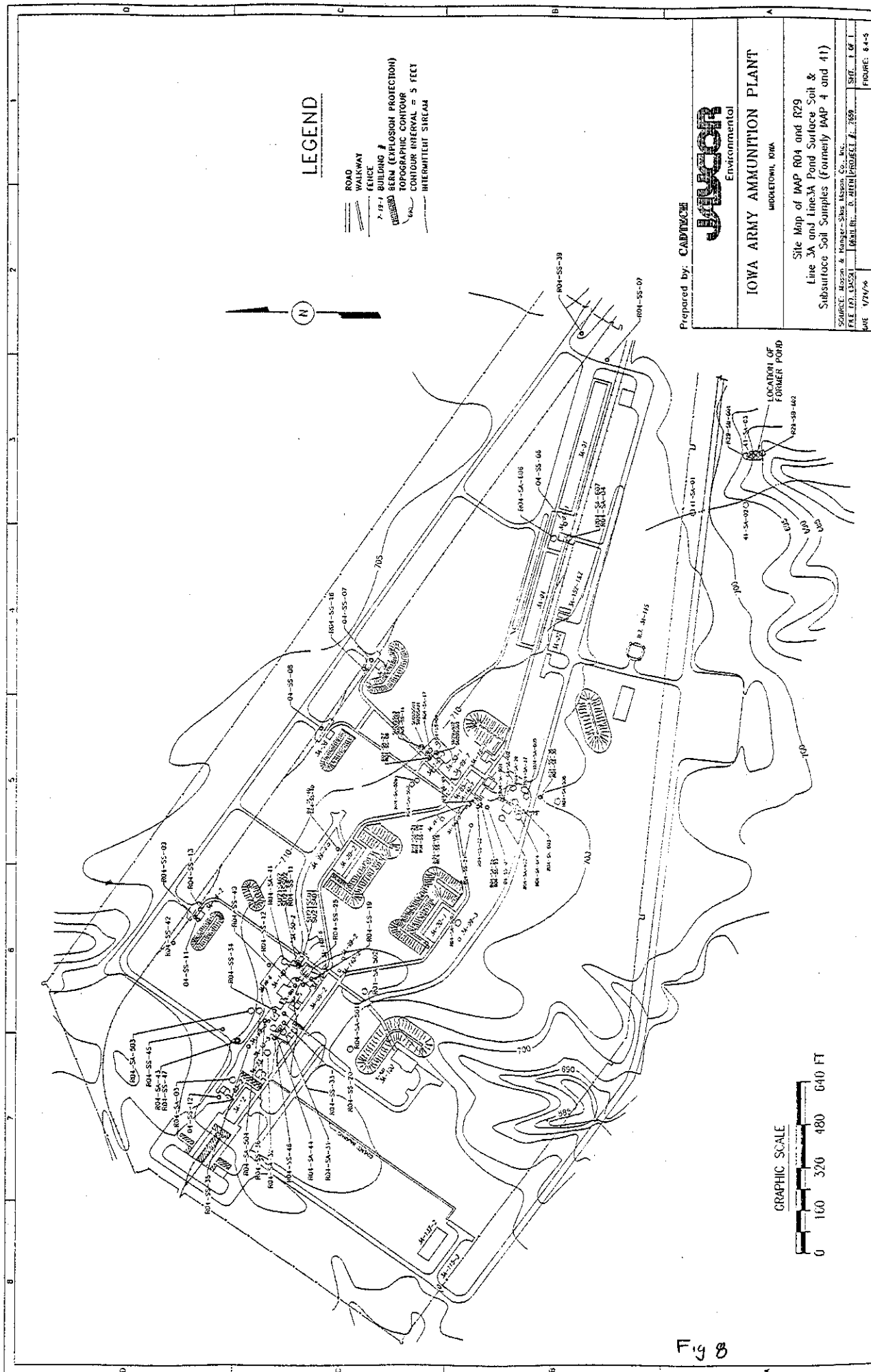


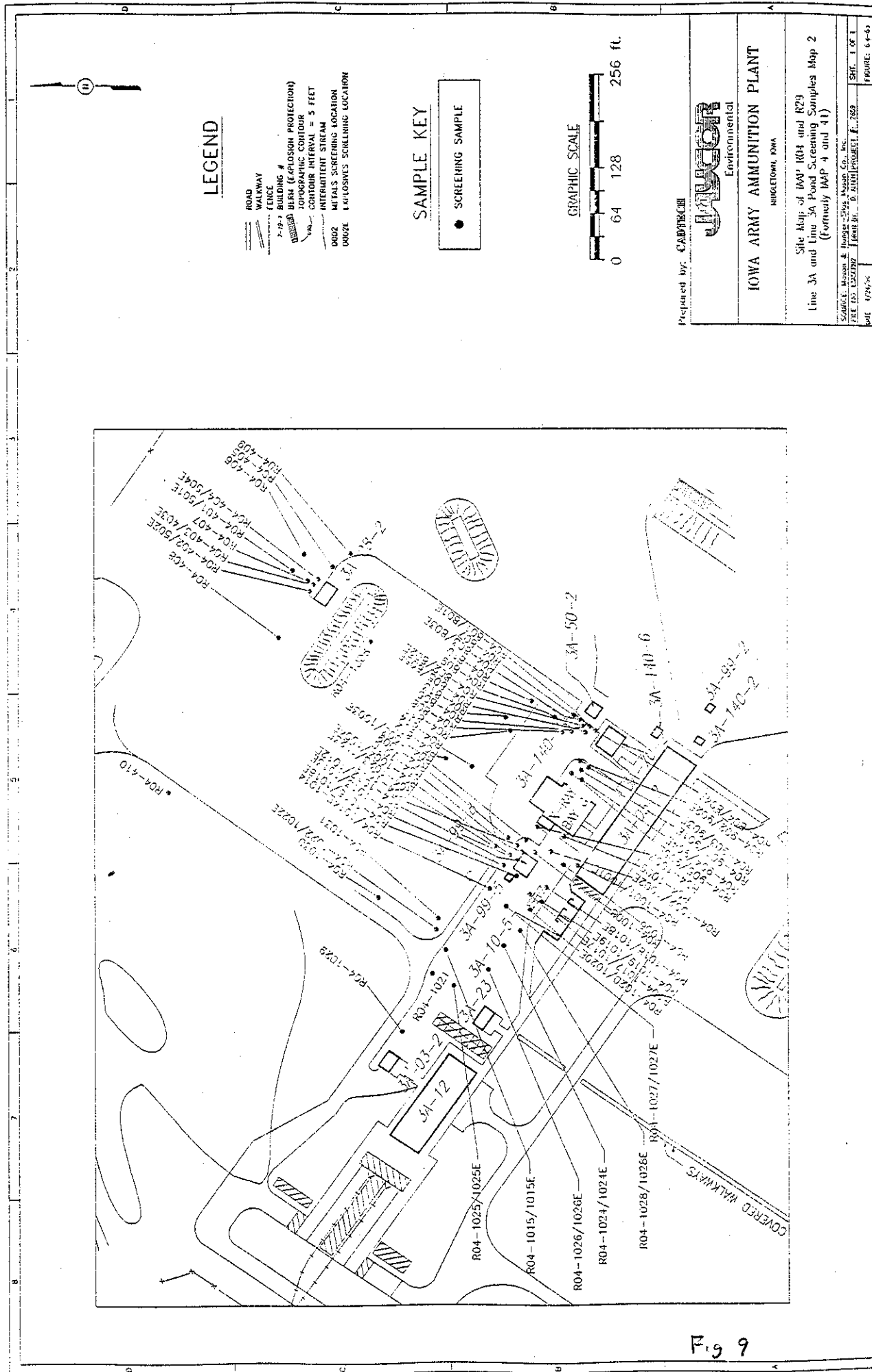














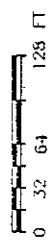
LEGEND

- ROAD
- WALKWAY
- FENCE
- 7-19-1 BUILDING
- QUARTER BERM (EXPLOSION PROTECTION)
- TOPOGRAPHIC CONTOUR
- CONTOUR INTERVAL = 5 FEET
- INTERMITTENT STREAM
- 0002 METALS SCREENING LOCATION
- 0002E EXPLOSIVES SCREENING LOCATION

SAMPLE KEY

- SCREENING SAMPLE

GRAPHIC SCALE



Prepared by: CADTECH



IOWA ARMY AMMUNITION PLANT

MUSKETOWN, IOWA

Site Map of IAWP R04 and R29
Line 3A and 3A Froid Screening Samples Map 3
(formerly IAWP-4 and 41)

DATE: 10/10/99
BY: J. J. [illegible]
FIGURE: 6.4-6a

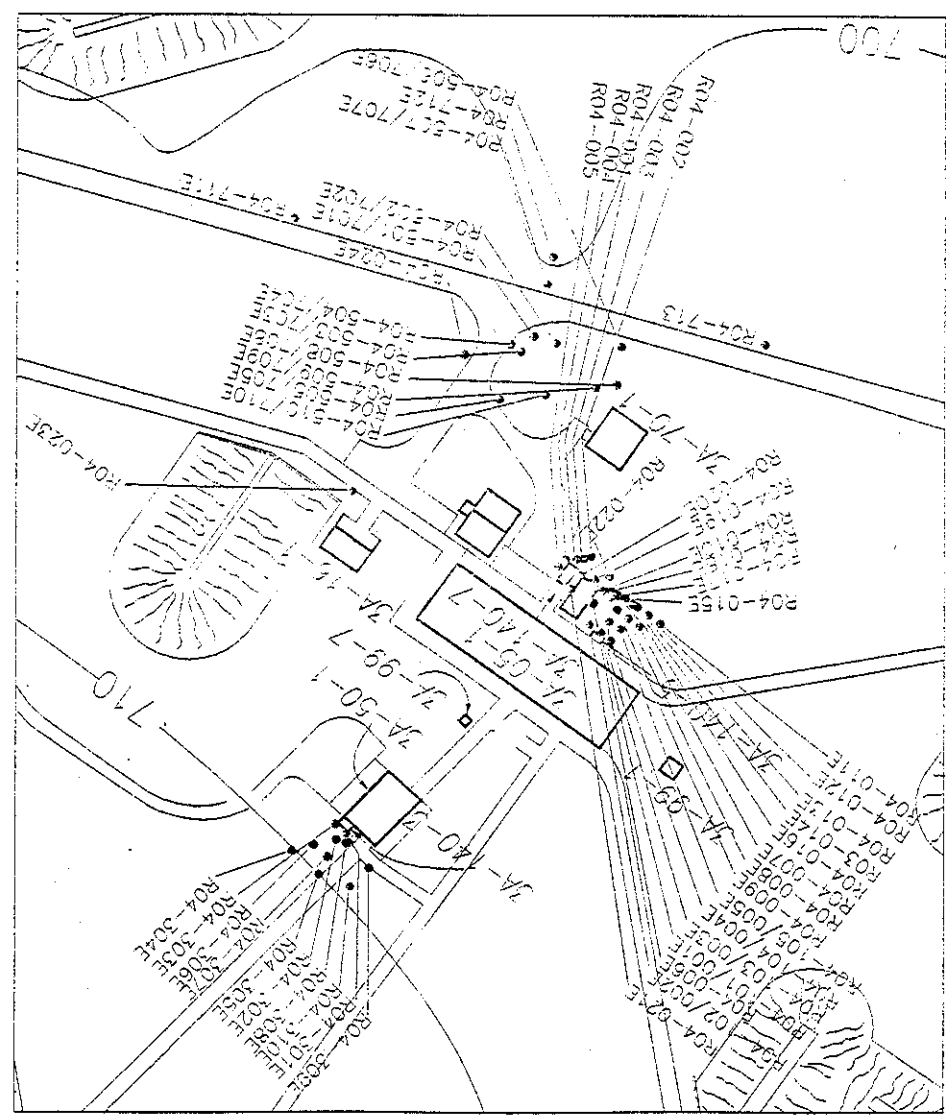
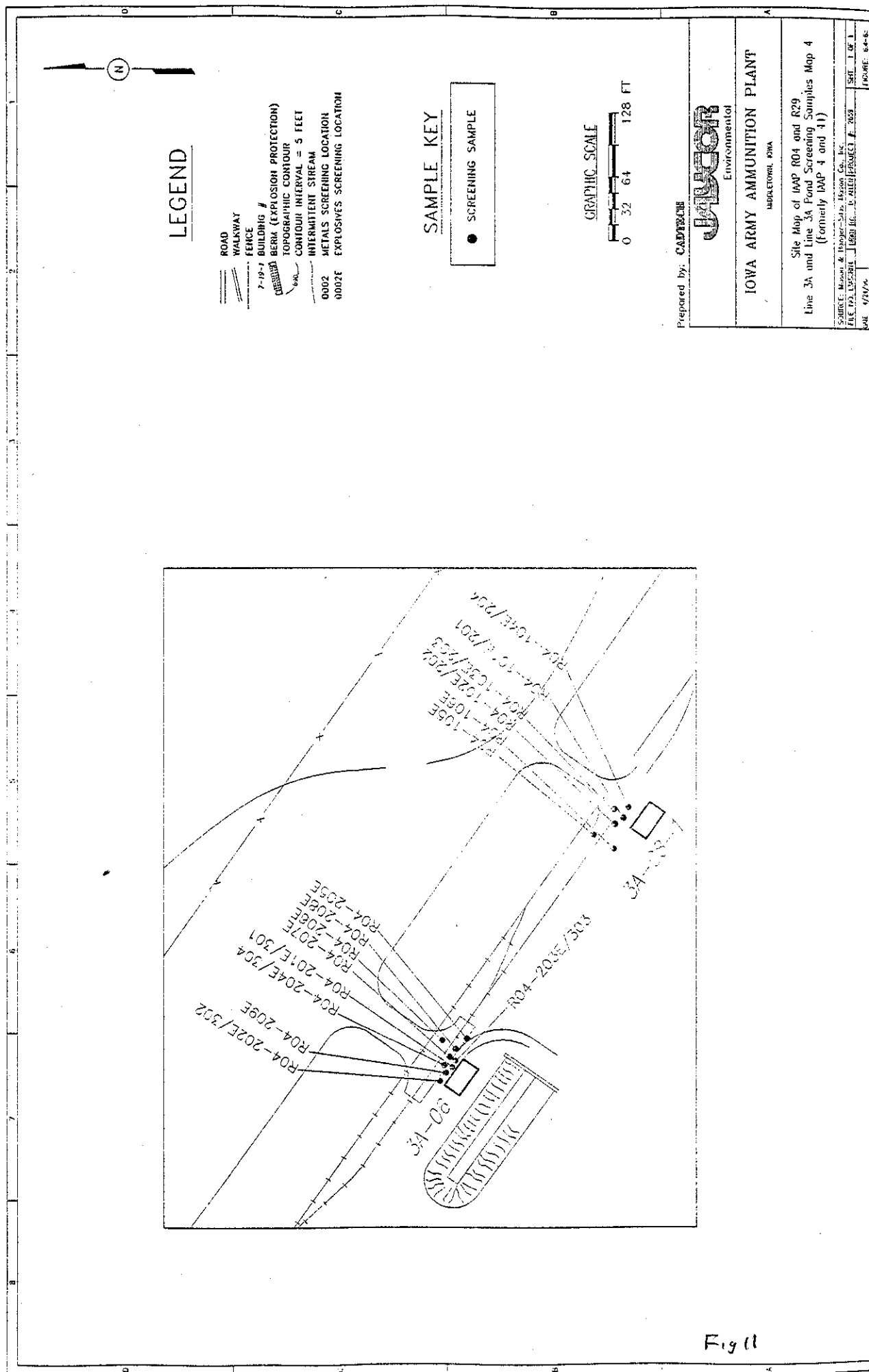
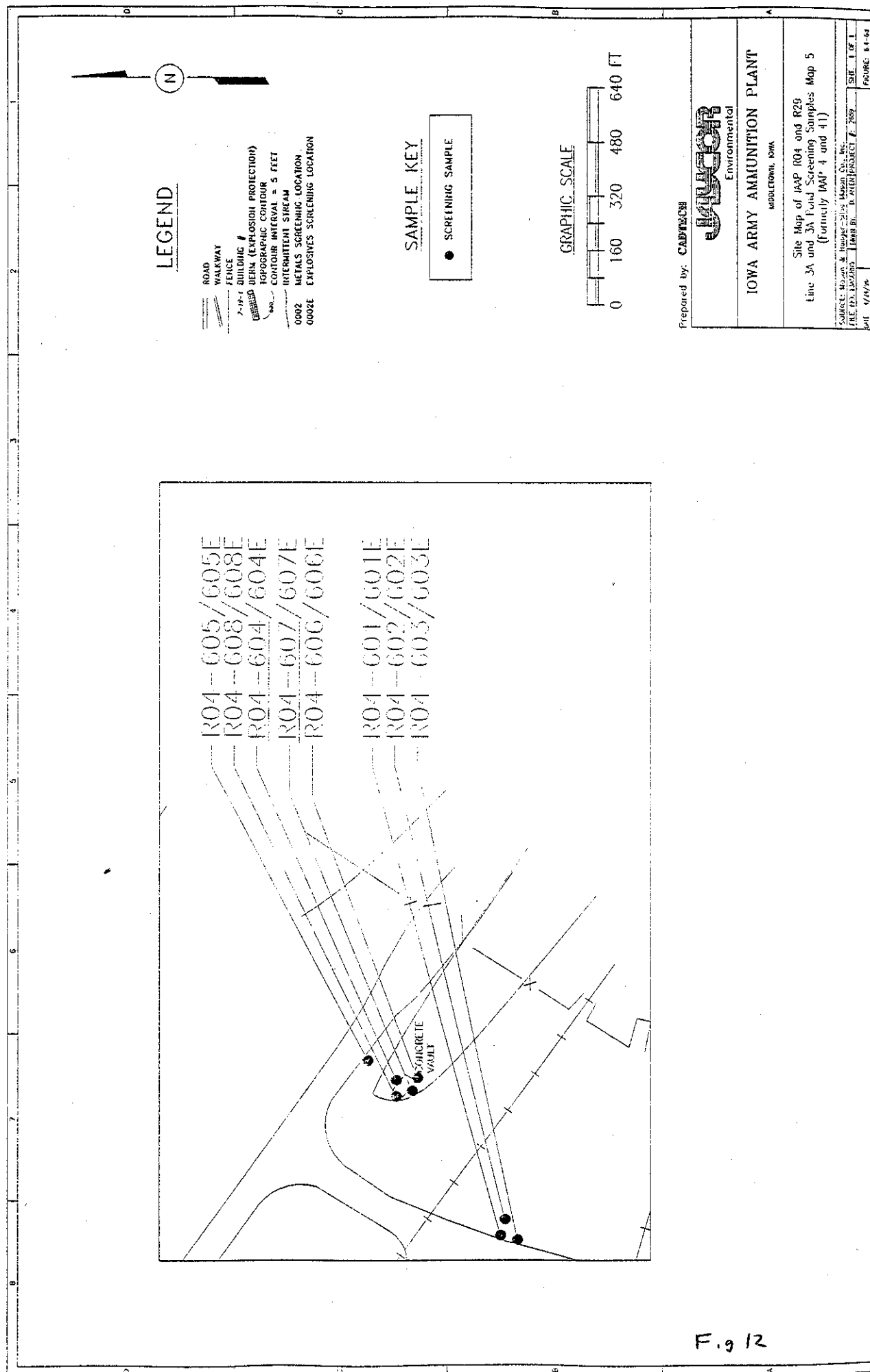


Fig 10



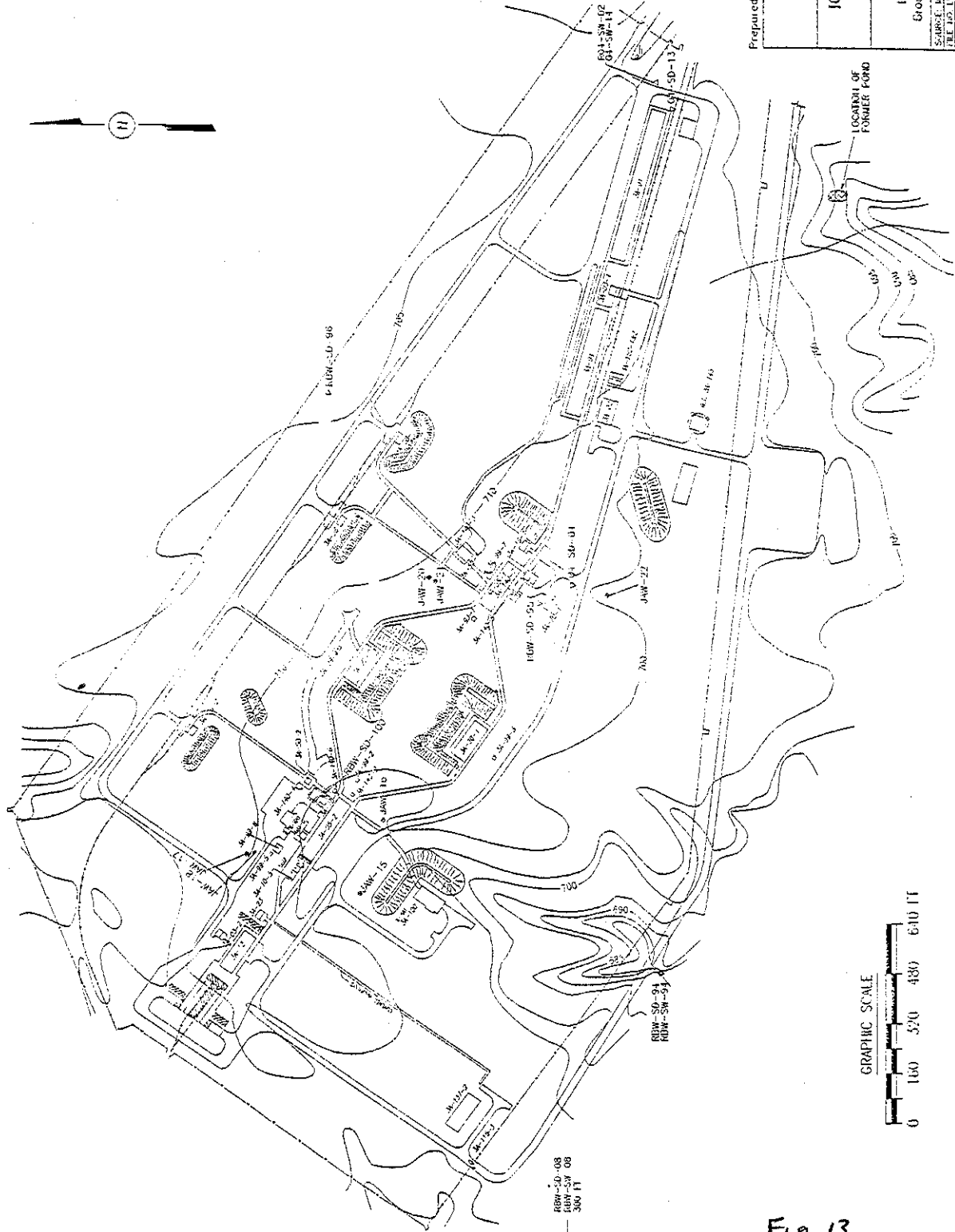


SAMPLE KEY

- SHALLOW WELL
- DEEP WELL
- SURFACE WATER SAMPLE
- SEDIMENT SAMPLE
- SURFACE WATER & SEDIMENT SAMPLE

LEGEND

- ROAD
- WALKWAY
- FENCE
- 7-10-7 BUILDING
- EXPLOSION PROTECTION BERM
- TOPOGRAPHIC CONTOUR
- CONTOUR INTERVAL = 5 FEET
- INTERMITTENT STREAM



Prepared by: CADTECH



IOWA ARMY AMMUNITION PLANT
MORTON, IOWA

Site Map of JAW R04 and R29
Line 3A and Line 3A Pond Filled Laboratory
Groundwater, Surface Water, & Sediment Samples

SOURCE: Morton & Hanger, Inc. 1988
FILE NO. 150001
DATE: 6/14/96
SHEET: 1 OF 1
FIGURE: 6-7

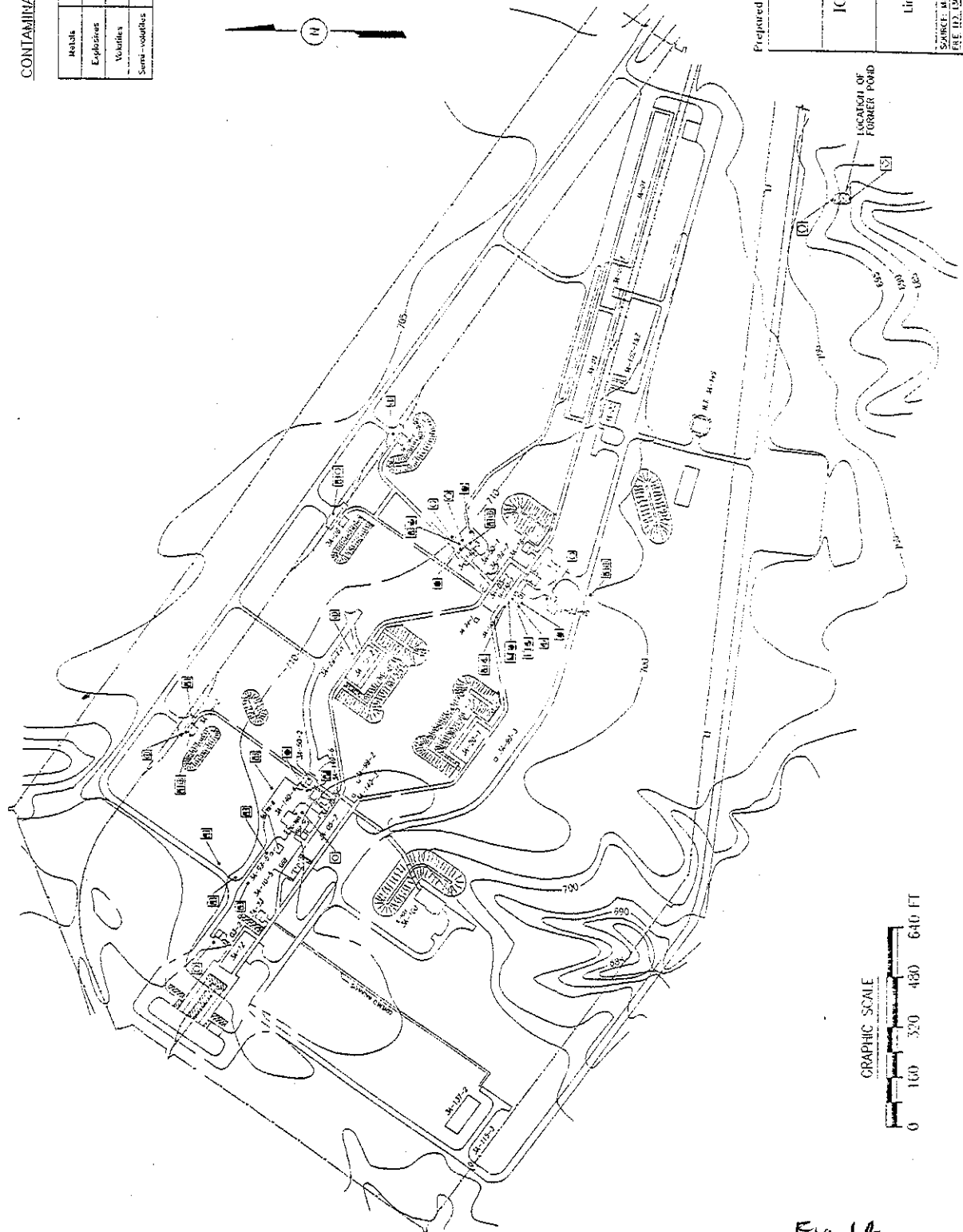
Fig 13

CONTAMINATION KEY:

| Relata | <10 ppm | <100 ppm | <1000 ppm | <10000 ppm | >10000 ppm |
|----------------|---------|----------|-----------|------------|------------|
| Explosives | □ | ⊕ | ⊕ | ⊕ | ⊕ |
| Volatiles | ○ | ⊕ | ⊕ | ⊕ | ⊕ |
| Semi-volatiles | ○ | ⊕ | ⊕ | ⊕ | ⊕ |

LEGEND

- ROAD
- WALKWAY
- FENCE
- ~197-1 BUILDING
- BURN (EXPLOSION PROTECTION)
- TOPOGRAPHIC CONTOUR
- CONTOUR INTERVAL = 5 FEET
- INTERMITTENT STREAM



Prepared by: CAMPTRECH



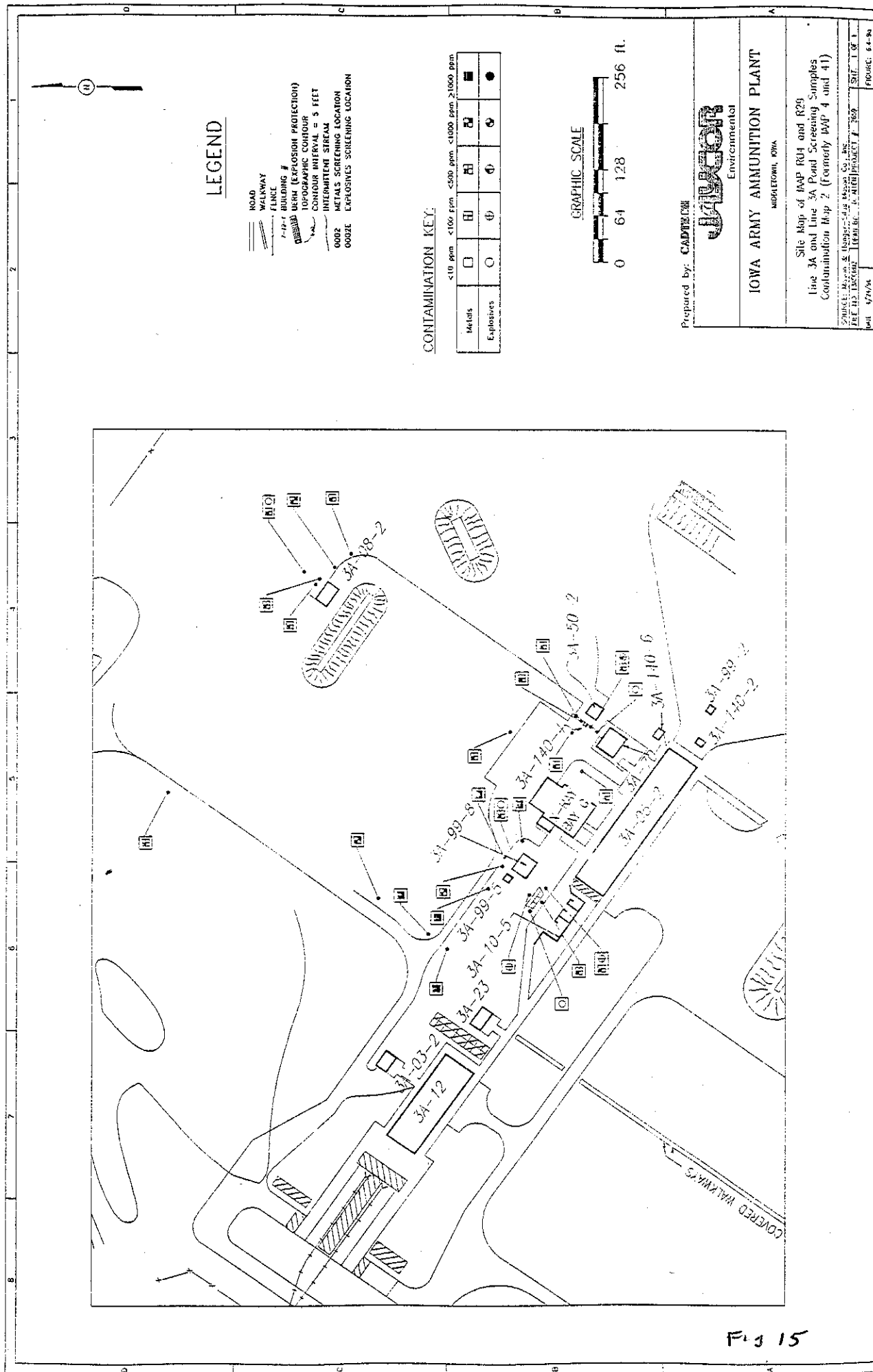
IOWA ARMY AMMUNITION PLANT

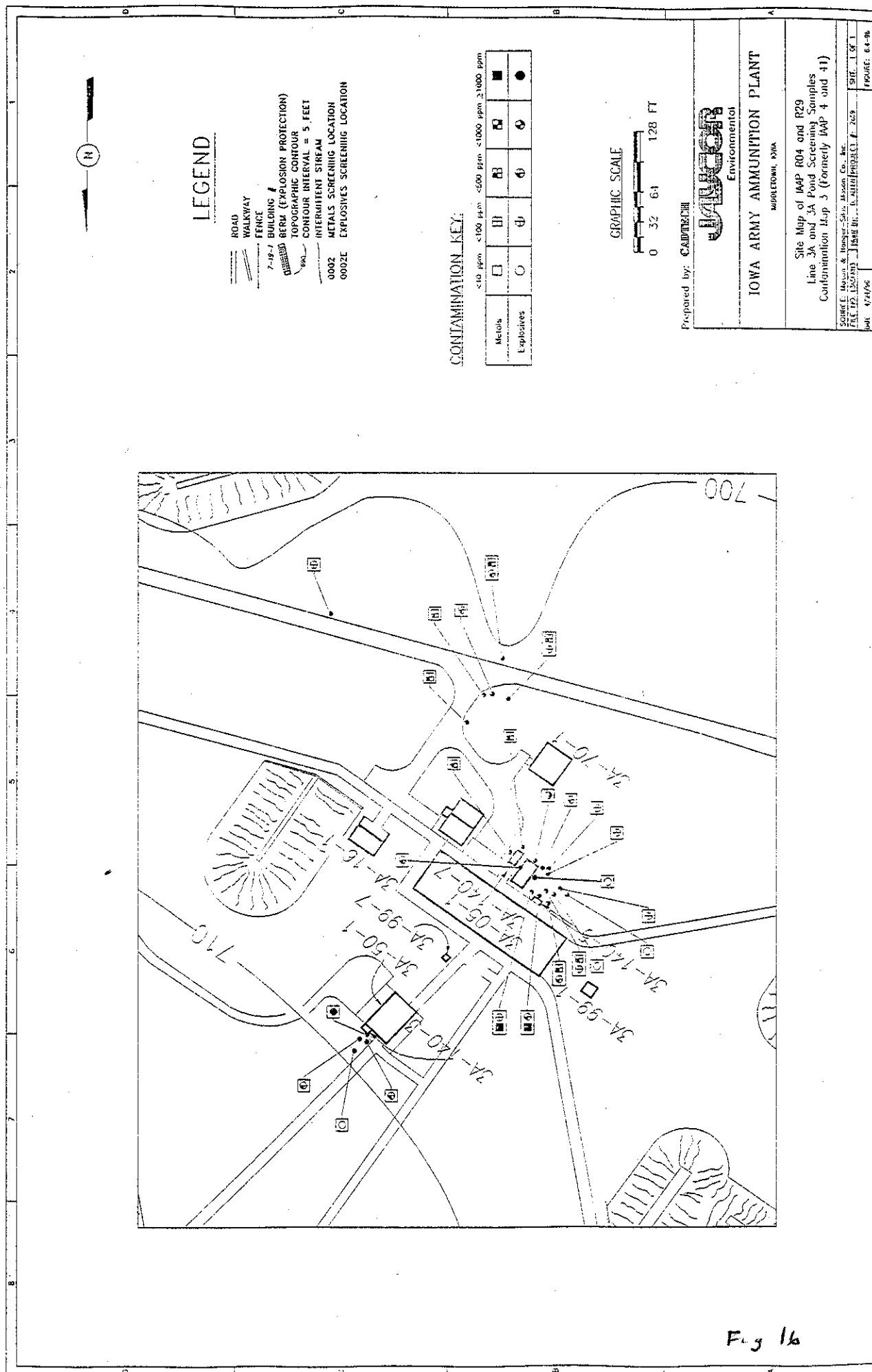
MIDDLETOWN, IOWA

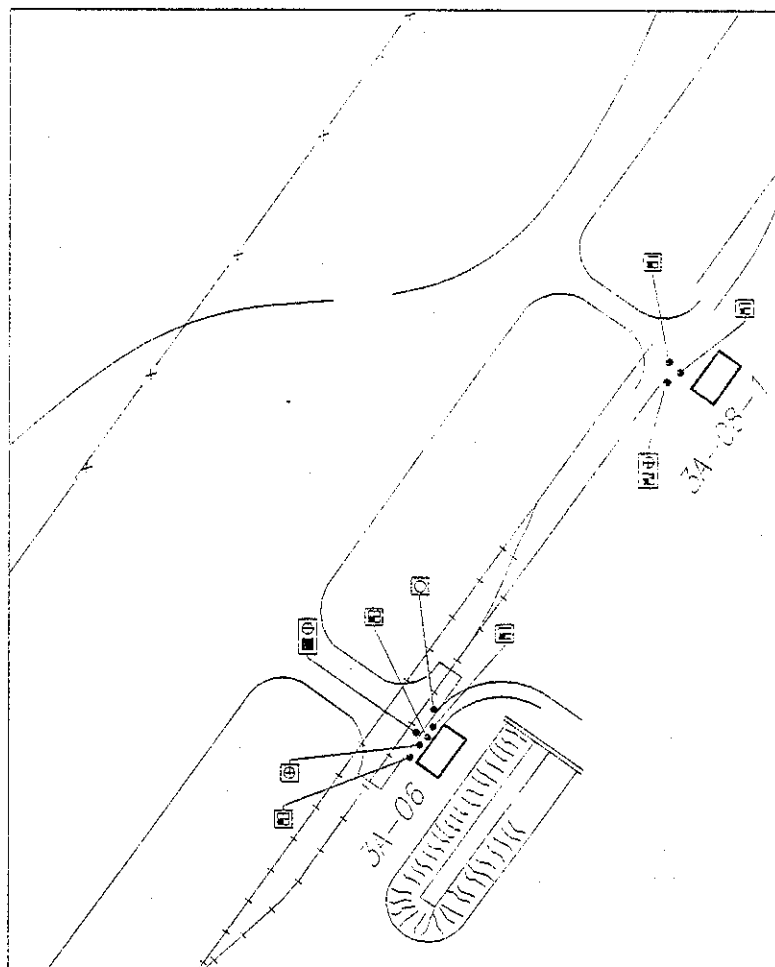
Site Map of IAP R04 and R29
Line 3A and Line 3B Pond Soils Contamination
(Formerly IAP 4 and 11)

| | | | |
|--------------------|--------------|-------------------------|---------------|
| SCALE: 1/8" = 100' | DATE: 1/1/83 | BY: J. H. H. / J. H. H. | FIGURE: 6-4-8 |
|--------------------|--------------|-------------------------|---------------|

Fig 14







LEGEND

- ROAD
- WALKWAY
- FENCE
- 7-19-1 BUILDING #
- BERM (EXPLOSION PROTECTION)
- TOPOGRAPHIC CONTOUR
- CONTOUR INTERVAL = 5 FEET
- INTERMITTENT STREAM
- 0002 METALS SCREENING LOCATION
- 0002E EXPLOSIVES SCREENING LOCATION

CONTAMINATION KEY:

| | | | | | |
|------------|---------|----------|----------|-----------|-----------|
| | <10 ppm | <100 ppm | <500 ppm | <1000 ppm | >1000 ppm |
| Metals | □ | ▢ | ▣ | ▤ | ■ |
| Explosives | ○ | ◐ | ◑ | ◒ | ● |

GRAPHIC SCALE



Prepared by: CAMTECH

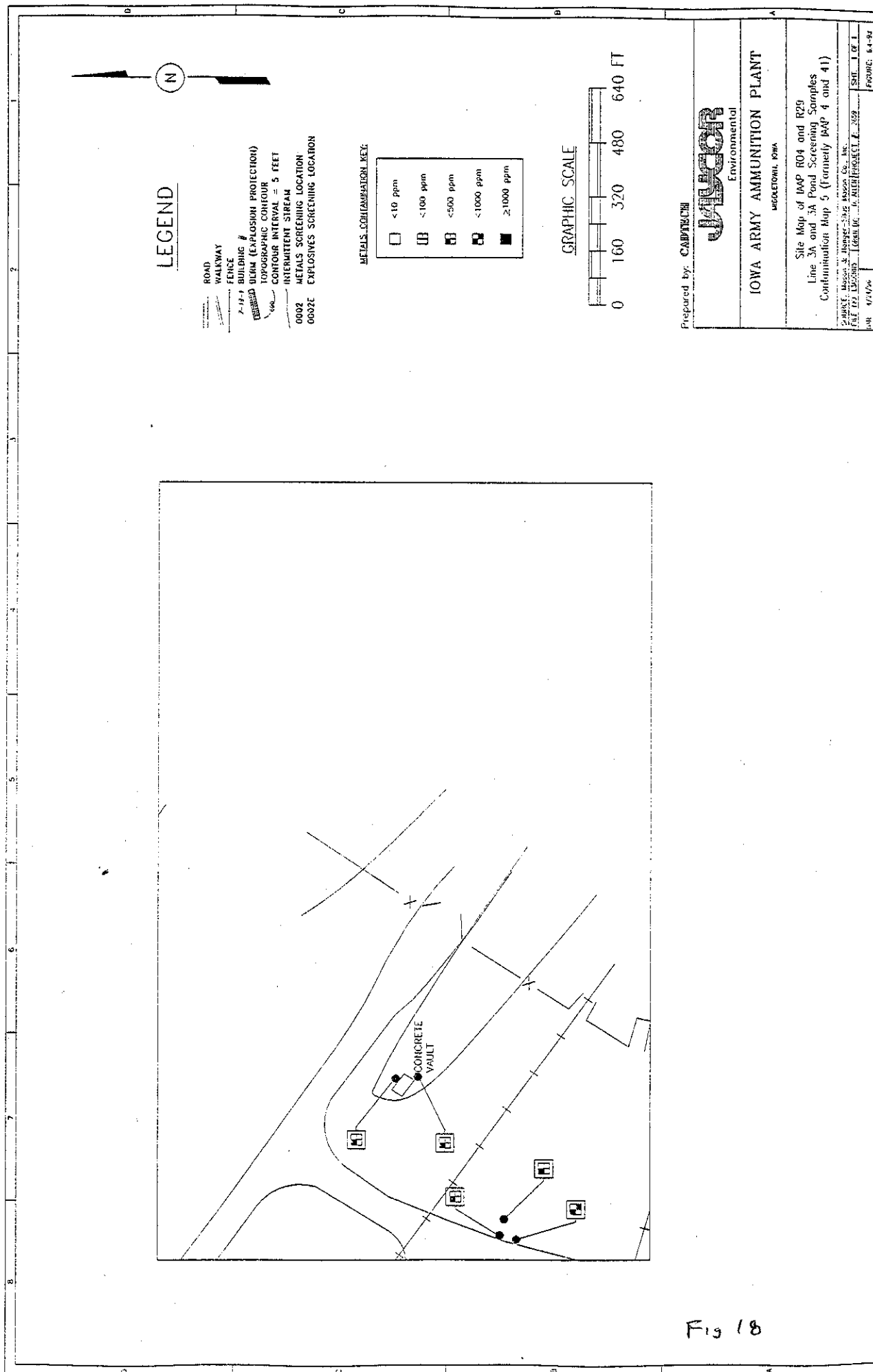
CAMTECH
Environmental

IOWA ARMY AMMUNITION PLANT

MIDDLEBURY, IOWA

Site Map of IAP R04 and R29
Line 3A and Line 3A Pond Screening Samples
Contamination Map 4 (formerly IAP 4 and 41)

SOURCE: Mazon & Hanger-Solo Map Co., Inc.
FILE NO. 1255/PM
DATE: 4/15/94
SHEET 1 OF 1
FIGURE 64-9



Prepared by: CAMTECH

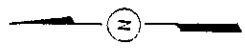
UNICOR
Environmental

IOWA ARMY AMMUNITION PLANT

MEGACITRON, IOWA

Site Map of IAP R04 and R29
Line 3A and 3A Pond Screening Samples
Continuation Map 5 (Formerly MAP 4 and 41)

UNICOR, Mason, S. Howard, John Mason Co., Inc.
P.O. Box 130000, Mason, MO 64050
DATE: 10/13/2000
SHEET: 1 OF 1
PROJECT: E-2029
FORM: 644-52

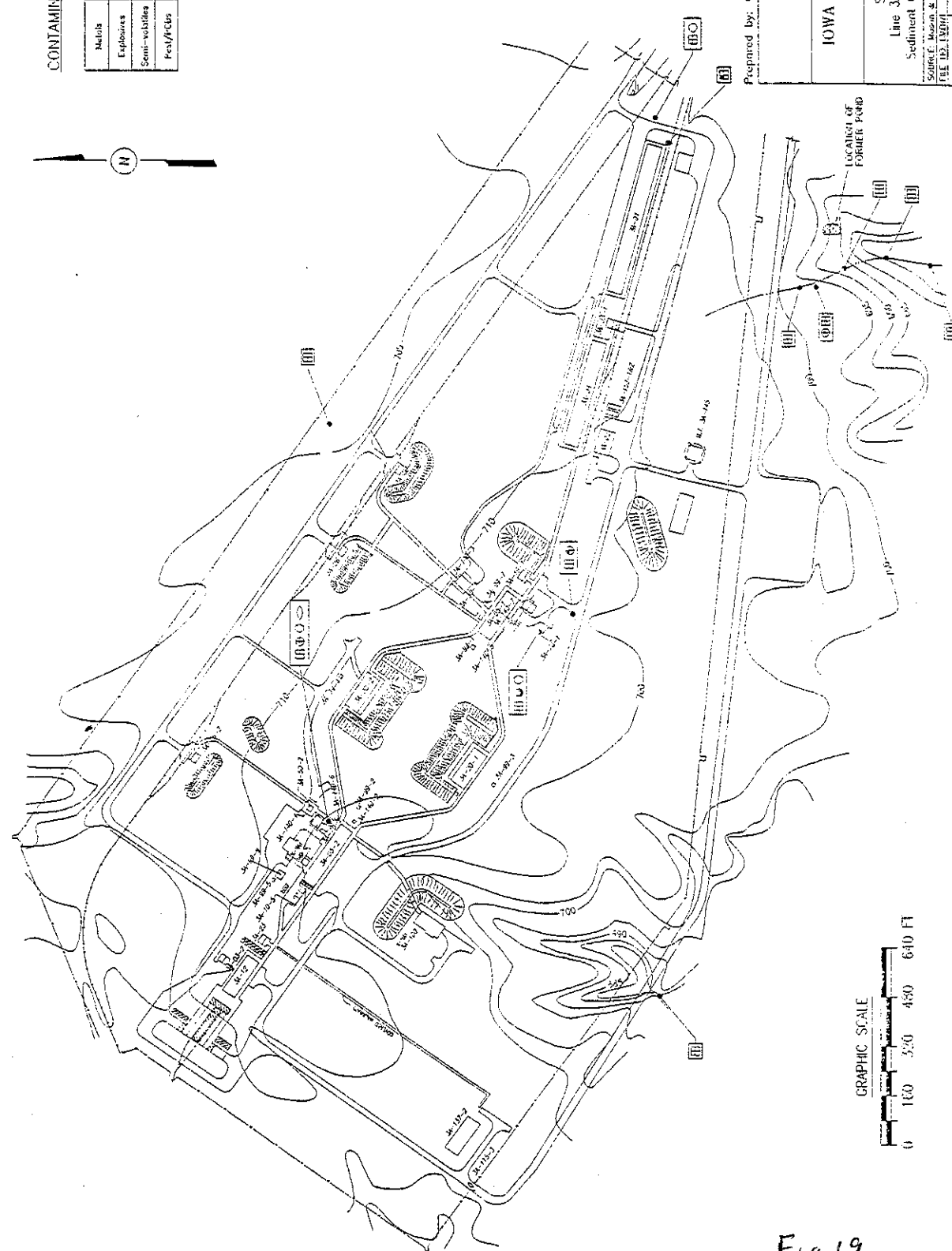


CONTAMINATION KEY:

| | <10 ppm | <100 ppm | <500 ppm | <1000 ppm | >1000 ppm |
|----------------|---------|----------|----------|-----------|-----------|
| Metals | □ | ■ | ■ | ■ | ■ |
| Explosives | ○ | ○ | ○ | ○ | ○ |
| Semi-volatiles | ○ | ○ | ○ | ○ | ○ |
| Pest/PCPs | ○ | ○ | ○ | ○ | ○ |

LEGEND

- ROAD
- WALKWAY
- FENCE
- 2-1/2' BUILDING / TOPOGRAPHIC CONTOUR
- EXPLOSION PROTECTION CONTOUR INTERVAL = 5 FEET
- INTERMITTENT STREAM



Prepared by: **CADENCE**



IOWA ARMY AMMUNITION PLANT

Site Map of IAWP R04 and R29
Line 3A and Line 3A Pond Surface Water/
Sediment Contamination (Formerly IAWP 4 and 41)

Source: Mazon & Hargreaves, 2002; Mazon Co., Inc.
FILE NO. 150001 (646) D. U. AREA PROJECT F. 202
DATE 4/24/04
SHEET 1 OF 1
FIGURE 6-4-30



Fig 19

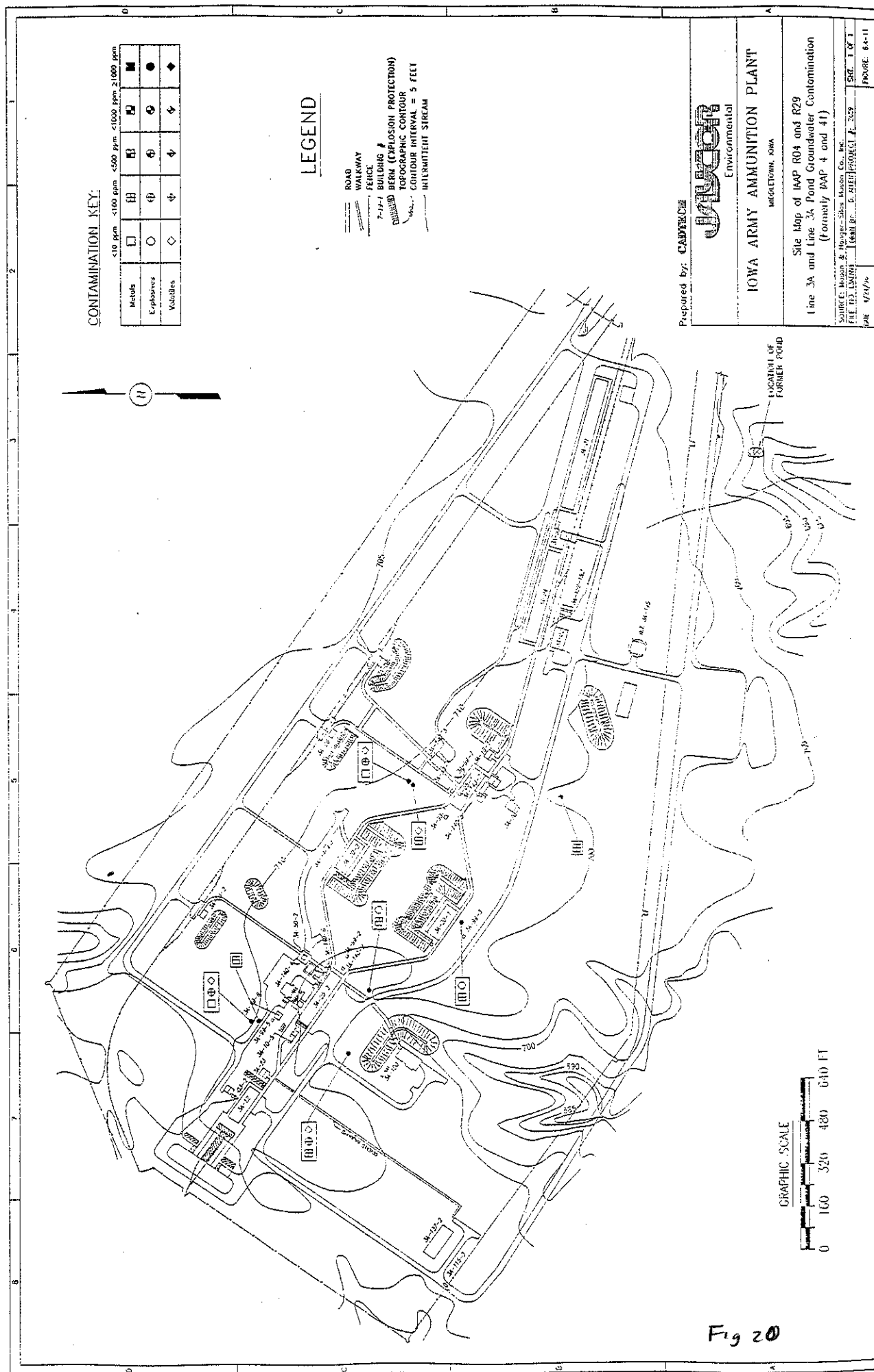


Table 6.4-1
Sample Summary
Line 3A

| RI Sample Number | Phase | Analyses | Sample Type | Sample Category | Depth (feet) | Location |
|------------------|-------|--------------------|-------------|-----------------|--------------|---|
| 04-SD-01-01 | SI | Explosives, Metals | G | A | 0.5 | In ditch on E side of road 5' from mouth of culvert. (No corresponding SW sample.) |
| 04-SS-02-01 | SI | Explosives, Metals | G | A | 0.5 | Underneath the above-ground tank N of 3A-70-1. |
| 04-SS-03-01 | SI | Metals | C | A | 0.5 | Inside fenced transformer area approximately 30' N of 3A-70-1. 4 aliquots from the 4 sides that surround the 2 concrete transformer pads inside the fence line. |
| 04-SS-03-02 | SI | Metals | C | A | 0.5 | Duplicate of 03-01. |
| 04-SS-04-01 | SI | Explosives, Metals | C | A | 0.5 | NW of 3A-70-1, 10' from SW corner of Melt Building. 3 aliquots: against building near door, 10' E of door, and 10' S of door at downspout beneath excavation slide. |
| 04-SS-06-01 | SI | SVOCs, VOCs | G | A | 0.5 | Under SE corner of solvent storage building Dock 3A-03. |
| 04-SS-07-01 | SI | Explosives, Metals | C | A | 0.5 | In ditch under NW corner of explosives storage Dock 3A-08. 3 aliquots, 1 in front of each door. |
| 04-SS-08-01 | SI | Explosives, Metals | C | A | 0.5 | In ditch between walkway of explosive storage dock 3A-06 and railroad tracks. 2 aliquots, 1 in front of each door. |
| 04-SS-09-01 | SI | Explosives, Metals | C | A | 0.5 | Approximately 25' N of doors to sump Building 3A-140-3. 4 aliquots from stained areas outside of doors. |
| 04-SS-10-01 | SI | Explosives, Metals | G | A | 0.5 | Approximately 5' N of Building 3A-20-2 (Bay B section). |
| 04-SS-11-01 | SI | Explosives, Metals | C | A | 0.5 | In gravel ditch at NW corner of explosive storage dock 3A-08-2. 3 aliquots, 1 in front of each door. |

SI = Site Investigation
S = Screening Sample

I = Phase 1 RI/FS
G = Grab

II = Phase 2 RI/FS
A = Analytical Sample

SS = Sump Survey
C = Composite

FO = Follow-on RI/FS
NA = Not Applicable

Table 6.4-1 (Continued)

| RI Sample Number | Phase | Analyses | Sample Type | Sample Category | Depth (feet) | Location |
|------------------|-------|----------------------------|-------------|-----------------|--------------|---|
| 04-SS-12-01 | SI | SVOCs, VOCs | G | A | 0.5 | In depression, 6' N of door to solvent storage Building 3A-03-2. |
| 04-SD-13-01 | SI | Explosives, Metals VOCs | G | A | 0.5 | Drainage grate pipe near SE corner of Building 3A-01 (possible infiltration contamination). |
| 04-SW-14-01 | SI | Explosives | G | A | 0.5 | Grab from water standing in unidentified structure (possible old sump) off NE corner of Building 3A-01. |
| 04-EB-15-01 | SI | Explosives, Metals VOCs | G | A | N/A | Equipment Blank. |
| R04-SW-02-01 | I | Explosives, Metals | G | A | - | Confirmation sample of SI sample 04-SW-14-01 located within sump. |
| R04-SA-03-01 | I | SVOCs, VOCs | G | A | 4.0 | Soil gas confirmation corresponds with survey sample R04-21. |
| R04-SA-04-01 | I | SVOCs, VOCs | G | A | 4.0 | Soil gas confirmation corresponds with survey sample R04-11. |
| R04-SS-05-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-004-E-01. |
| R04-SS-06-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-301-E-01. |
| R04-SS-07-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-603-E-01. |
| R04-SS-08-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-001-E-01. |
| R04-SS-09-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-501-E-01. |
| R04-SS-10-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-403-E-01. |
| R04-SS-11-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-801-E-01. |
| R04-SS-12-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-901-E-01. |

SI = Site Investigation
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A = Analytical Sample

SS = Sump Survey
C = Composite

FO = Follow-on RI/FS
NA = Not Applicable

Table 6.4-1 (Continued)

| RI Sample Number | Phase | Analyses | Sample Type | Sample Category | Depth (feet) | Location |
|------------------|-------|------------|-------------|-----------------|--------------|---|
| R04-SS-13-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-104-M-01. |
| R04-SS-14-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-101-M-01. |
| R04-SS-15-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-104-M-01. |
| R04-SS-16-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-305-E-01. |
| R04-SA-17-01 | I | Explosives | G | A | 1.0 | Explosives confirmatory sample for R04-302-E-02. |
| R04-SS-18-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-105-E-01. |
| R04-SS-19-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-903-M-01. |
| R04-SS-20-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-1002-M-01. |
| R04-SA-21-01 | I | Explosives | G | A | 1.0 | Explosives confirmatory sample for R04-001-E-02. |
| R04-SS-22-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-010-E-01. |
| R04-SS-23-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-019-E-01. |
| R04-SS-24-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-012-E-01. |
| R04-SS-25-01 | I | Metals | G | A | 0.5 | Explosives confirmatory sample for R04-902-M-01. |
| R04-SA-27-01 | I | Explosives | G | A | 2.0 | Explosives confirmatory sample for R04-301-E-03. |
| R04-SA-28-01 | I | Explosives | G | A | 3.0 | Explosives confirmatory sample for R04-019-E-04. |
| R04-SA-29-01 | I | Explosives | G | A | 1.0 | Explosives confirmatory sample for R04-705-E-02. |
| R04-SS-30-01 | I | Explosives | G | A | 0.5 | Explosives confirmatory sample for R04-707-E-01. |
| R04-SA-31-01 | I | Explosives | G | A | 2.0 | Explosives confirmatory sample for R04-1019-E-03. |

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A = Analytical Sample

SS = Sump Survey
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FO = Follow-on RI/FS
NA = Not Applicable

Table 6.4-1 (Continued)

| RI Sample Number | Phase | Analyses | Sample Type | Sample Category | Depth (feet) | Location |
|------------------|-------|--------------------------|-------------|-----------------|--------------|---|
| R04-SA-32-01 | I | Explosives | G | A | 1.0 | Explosives confirmatory sample for R04-1024-E-02. |
| R04-SS-33-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-1006-M-01. |
| R04-SS-34-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-1010-M-01. |
| R04-SS-35-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-1015-M-01. |
| R04-SS-36-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-1013-M-01. |
| R04-SA-37-01 | I | Metals | G | A | 2.0 | Metals confirmatory sample for R04-504-M-03. |
| R04-SS-38-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-507-M-01. |
| R04-SS-39-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-608-M-01. |
| R04-SS-40-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-811-M-01. |
| R04-SA-41-01 | I | Metals | G | A | 1.0 | Metals confirmatory sample for R04-809-M-02. |
| R04-SS-42-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-408-M-01. |
| R04-SA-43-01 | I | Metals | G | A | 1.0 | Metals confirmatory sample for R04-1022-M-02. |
| R04-SA-44-01 | I | Metals | G | A | 1.0 | Metals confirmatory sample for R04-1017-M-02. |
| R04-SS-45-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-1030-M-02. |
| R04-SS-46-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-1028-M-01. |
| R04-SS-47-01 | I | Metals | G | A | 0.5 | Metals confirmatory sample for R04-1022-M-01. |
| SU-20-SS-01-01 | SS | Explosives, Metals | G | A | 0.5 | Outfall at sump 3-140-3. |
| SU-20-SA-01-02 | SS | Explosives, Metals, VOCs | G | A | 2.8 | Collocated with SU-20-SS-01-01. |

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 FO = Follow-on RI/FS
 NA = Not Applicable

Table 6.4-1 (Continued)

| RI Sample Number | Phase | Analyses | Sample Type | Sample Category | Depth (feet) | Location |
|------------------|-------|--------------------------------|-------------|-----------------|--------------|---|
| SU-20-SS-02-01 | SS | Explosives, Metals | G | A | 0.5 | SE corner of 3-140-3. |
| SU-20-SA-02-02 | SS | Explosives, Metals, VOCs | G | A | 2.8 | Collocated with SU-20-SS-02-01. |
| SU-20-SS-03-01 | SS | Explosives, Metals | G | A | 0.5 | Depressed area N of outfall pipe (3-140-3). |
| SU-20-SA-03-02 | SS | Explosives, Metals | G | A | 1.0 | Collocated with SU-20-SS-03-01. |
| SU-21-SS-01-01 | SS | Explosives, Metals | G | A | 0.5 | SE corner of 3A-50-2. |
| SU-21-SA-01-02 | SS | Explosives, Metals, VOCs | G | A | 3.3 | Collocated with SU-21-SS-01-01. |
| SU-21-SS-02-01 | SS | Explosives, Metals | G | A | 0.5 | N side of 3A-50-2. |
| SU-21-SA-02-02 | SS | Explosives, Metals | G | A | 3.3 | Collocated with SU-21-SS-02-01. |
| R04-GW-501-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 6.9 | JAW-15. See site map. |
| R04-SA-501-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 8.0 | Soil sample collected from JAW-15. |
| R04-GW-502-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 9.75 | JAW-16. See site map. |
| R04-SA-502-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 53.0 | Soil sample collected from JAW-16. |
| R04-GW-503-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 4.8 | JAW-17. See site map. |
| R04-SA-503-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 7.0 | Soil sample collected from JAW-17. |
| R04-GW-504-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 43.3 | JAW-18. See site map. |

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G = Grab

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A = Analytical Sample

SS = Sump Survey
C = Composite

FO = Follow-on RI/FS
NA = Not Applicable

Table 1-5

Table 6.4-1 (Continued)

| RI Sample Number | Phase | Analyses | Sample Type | Sample Category | Depth (feet) | Location |
|------------------|-------|-----------------------------------|-------------|-----------------|---------------|------------------------------------|
| R04-SA-504-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 47.5 | Soil sample collected from JAW-18. |
| R04-GW-505-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 5.5 | JAW-19. See site map. |
| R04-SA-505-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 7.0 | Soil sample collected from JAW-19. |
| R04-GW-506-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 4.9 | JAW-20. See site map. |
| R04-SA-506-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 6.0 | Soil sample collected from JAW-20. |
| R04-GW-507-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 45.0 | JAW-21. See site map. |
| R04-SA-507-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 57.0- 59.0 | Soil sample collected from JAW-21. |
| R04-GW-508-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 10.4 | JAW-22. See site map. |
| R04-SA-508-01 | II | Explosives, Metals SVOCs, VOCs | G | A | 17.0 | Soil sample collected from JAW-22. |
| R04-GW-601-01 | FO | Metals | G | A | 41.42 | Collected from JAW-16. |
| R04-GW-602-01 | FO | Metals | G | A | 3.78 | Collected from JAW-21. |
| R04-SS-601-01 | FO | PCBs | G | A | 0.5 | 1.5' N of N face of 3A-70-1. |
| R04-SA-601-02 | FO | PCBs | G | A | 3.0 | Collocated with R04-SS-601-01. |
| R04-SS-602-01 | FO | PCBs | G | A | 0.5 | 1.5' W of W face of 3A-70-1. |

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 A = Analytical Sample
 SS = Sump Survey
 C = Composite
 FO = Follow-on RI/FS
 NA = Not Applicable

Table 6

Table 6.4-1 (Continued)

| R1 Sample Number | Phase | Analyses | Sample Type | Sample Category | Depth (feet) | Location |
|------------------|-------|----------|-------------|-----------------|--------------|--|
| R04-SA-602-02 | FO | PCBs | G | A | 3.0 | Collocated with R04-SS-602-01. |
| R04-SS-603-01 | FO | PCBs | G | A | 0.5 | 1.5' E of E face of 3A-70-1. |
| R04-SA-603-02 | FO | PCBs | G | A | 3.0 | Collocated with R04-SS-603-01. |
| R04-SS-604-01 | FO | PCBs | G | A | 0.5 | 1.5' S of S face of 3A-70-1. |
| R04-SA-604-02 | FO | PCBs | G | A | 3.0 | Collocated with R04-SS-604-01. |
| R04-SS-605-01 | FO | PCBs | G | A | 0.5 | 50' SE of SE corner (downgradient) of 3A-70-1. |
| R04-SA-605-02 | FO | PCBs | G | A | 3.0 | Collocated with R04-SS-605-01. |
| R04-SA-606-01 | FO | VOCs | G | A | 5.0 | Confirmation sample collected at soil gas location 11 between 3-03 and 3-04. |
| R04-SA-607-01 | FO | VOCs | G | A | 5.0 | Confirmation sample collected at soil gas location 8, S of 3-03. |

SI = Site Investigation
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I = Phase 1 RI/FS
G = Grab

II = Phase 2 RI/FS
A = Analytical Sample

SS = Sump Survey
C = Composite

FO = Follow-on RI/FS
NA = Not Applicable

Table 6.4-1

Table 6.4-2 Line 3A (R04)
All Detectable Data

| SWMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|---------|----------------------|--------------|-----------------|----------------------------|-----------|--------|------|--------|-------|-------------|
| R04 | CGW | WELL | JAW-15 | R04GW501 | 6.9 | EXPLOSIVES | Cyclotetramethylenetetran | | UW32 | | 2.11 | UGL | 14-May-93 |
| | | | | | | TAL_METAL | RDX / Cyclonite / Hexahyd | | UW32 | | 39.7 | UGL | 14-May-93 |
| | | | | | | | Barium | | SS10 | | 194 | UGL | 14-May-93 |
| | | | | | | | Chromium | | SS10 | | 19.2 | UGL | 14-May-93 |
| | | | | | | | Lead | | SD20 | | 8.68 | UGL | 14-May-93 |
| | | | | | | TCL_VOA | Trichloroethylene / Trichl | | UM20 | | 3 | UGL | 14-May-93 |
| | | JAW-16 | | R04GW502 | 9.75 | EXPLOSIVES | RDX / Cyclonite / Hexahyd | | UW32 | | 1.64 | UGL | 19-May-93 |
| | | | | | | TAL_METAL | Arsenic | | SD22 | | 2.77 | UGL | 19-May-93 |
| | | | | | | | Barium | | SS10 | | 326 | UGL | 19-May-93 |
| | | | | | | | Chromium | | SS10 | | 53 | UGL | 19-May-93 |
| | | | | | | | Lead | | SD20 | | 15.1 | UGL | 19-May-93 |
| | | | | | | | Barium | | SS10 | | 339 | UGL | 19-May-95 |
| | | JAW-17 | | R04GW601 R0450301 | 41.42 4.8 | EXPLOSIVES | Cyclotetramethylenetetran | | UW32 | | 3.31 | UGL | 14-May-93 |
| | | | | | | TAL_METAL | RDX / Cyclonite / Hexahyd | | UW32 | | 18.7 | UGL | 14-May-93 |
| | | | | | | | Barium | | SS10 | | 107 | UGL | 14-May-93 |
| | | | | | | | Lead | | SD20 | | 1.95 | UGL | 14-May-93 |
| | | | | | | TCL_VOA | Chloroform | | UM20 | | 1.4 | UGL | 14-May-93 |
| | | JAW-18 | | R0450401 | 43.3 | TAL_METAL | Barium | | SS10 | | 406 | UGL | 14-May-93 |
| | | | | | | | Chromium | | SS10 | | 49.5 | UGL | 14-May-93 |
| | | | | | | | Lead | | SD20 | | 7.7 | UGL | 14-May-93 |
| | | JAW-19 | | R04GW505 | 5.5 | EXPLOSIVES | RDX / Cyclonite / Hexahyd | | UW32 | | 3.09 | UGL | 14-May-93 |
| | | | | | | TAL_METAL | Barium | | SS10 | | 142 | UGL | 14-May-93 |
| | | | | | | | Chromium | | SS10 | | 10.3 | UGL | 14-May-93 |
| | | | | | | | Lead | | SD20 | | 2.93 | UGL | 14-May-93 |
| | | JAW-20 | | R0450601 | 4.9 | EXPLOSIVES | RDX / Cyclonite / Hexahyd | | UW32 | | 22.3 | UGL | 14-May-93 |
| | | | | | | TAL_METAL | Barium | | SS10 | | 80.6 | UGL | 14-May-93 |
| | | | | | | | Lead | | SD20 | | 1.52 | UGL | 14-May-93 |
| | | | | | | | Selenium | | SD21 | | 3.3 | UGL | 14-May-93 |
| | | | | | | TCL_VOA | Chloroform | | UM20 | | 0.84 | UGL | 14-May-93 |
| | | JAW-21 | | R04GW507 | 45 | TAL_METAL | Barium | | SS10 | | 323 | UGL | 14-May-93 |
| | | | | | | | Chromium | | SS10 | | 50.8 | UGL | 14-May-93 |
| | | | | | | | Lead | | SD20 | | 20.2 | UGL | 14-May-93 |
| | | | | | | TCL_VOA | Chloroform | | UM20 | | 0.98 | UGL | 14-May-93 |
| | | | | R04GW602 | 3.78 | TAL_METAL | Barium | | SS10 | | 81.7 | UGL | 16-May-95 |
| | | JAW-22 | | R04GW508 | 10.4 | | Barium | | SS10 | | 221 | UGL | 14-May-93 |

Tab 2-1

Table 6.4-2 Line 3A (R04)
All Detectable Data

| SWMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|----------|----------|------------|-----------------|---------------------------|-----------|--------|------|--------|-------|-------------|
| R04 | CGW | WELL | JAW-22 | R04GW508 | 10.4 | TAL_METAL | Chromium | | SS10 | | 27.5 | UGL | 14-May-93 |
| | | | | | | | Lead | | SD20 | | 10.2 | UGL | 14-May-93 |
| | | | | | | | Selenium | | SD21 | | 4.9 | UGL | 16-May-95 |
| | CSE | SURF | JAW-621 | R04GW602 | 3.78 | EXPLOSIVES | 1,3,5-Trinitrobenzene | | LW02 | | 2.88 | UGG | 06-Aug-91 |
| | | | 04SD0101 | 04SD0101 | 0.5 | | 1,3-Dinitrobenzene | 1 | LW02 | | 0.802 | UGG | 06-Aug-91 |
| | | | | | | | Cyclotetramethylenetetran | | LW02 | | 70.7 | UGG | 06-Aug-91 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW02 | | 120 | UGG | 06-Aug-91 |
| | | | | | | TAL_METAL | Arsenic | | B9 | | 6.39 | UGG | 06-Aug-91 |
| | | | | | | | Barium | | JS12 | | 211 | UGG | 06-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 71.4 | UGG | 06-Aug-91 |
| | | | | | | | Lead | | JD21 | | 34 | UGG | 06-Aug-91 |
| | | | | | | | Mercury | | Y9 | | 0.699 | UGG | 06-Aug-91 |
| | | | | | | | Selenium | | JD20 | | 0.588 | UGG | 06-Aug-91 |
| | | | | | | | Silver | | JS12 | | 2.12 | UGG | 06-Aug-91 |
| | | OTFL | 04SD1301 | 04SD1301 | | | Arsenic | | B9 | | 6.58 | UGG | 06-Aug-91 |
| | | | | | | | Barium | | JS12 | | 165 | UGG | 06-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 49.8 | UGG | 06-Aug-91 |
| | | | | | | | Lead | | JD21 | | 380 | UGG | 06-Aug-91 |
| | | | | | | | Mercury | | Y9 | | 0.128 | UGG | 06-Aug-91 |
| | | | | | | | Silver | | JS12 | | 1.05 | UGG | 06-Aug-91 |
| | CSO | RNSW | 04EB1501 | 04EB1501 | 0 | EXPLOSIVES | 2,4,6-Trinitrotoluene / a | | UW01 | | 0.9 | UGL | 07-Aug-91 |
| | | | | | | | 2,6-Dinitrotoluene | | UW01 | | 1.3 | UGL | 07-Aug-91 |
| | | SURF | 04SS0201 | 04SS0201 | 0.5 | | Cyclotetramethylenetetran | 1 | LW02 | | 0.869 | UGG | 06-Aug-91 |
| | | | | | | | RDX / Cyclonite / Hexahyd | 1 | LW02 | | 0.646 | UGG | 06-Aug-91 |
| | | | | | | TAL_METAL | Arsenic | | B9 | | 7.15 | UGG | 06-Aug-91 |
| | | | | | | | Barium | | JS12 | | 269 | UGG | 06-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 17 | UGG | 06-Aug-91 |
| | | | | | | | Lead | | JD21 | | 25 | UGG | 06-Aug-91 |
| | | | | | | | Mercury | | Y9 | | 0.057 | UGG | 06-Aug-91 |
| | | CMPH | 04SS0301 | 04SS0301 | | | Arsenic | | B9 | | 3.7 | UGG | 06-Aug-91 |
| | | | | | | | Barium | | JS12 | | 71.3 | UGG | 06-Aug-91 |
| | | | | | | | Cadmium | | JS12 | | 8.42 | UGG | 06-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 21.2 | UGG | 06-Aug-91 |
| | | | | | | | Lead | | JD21 | | 15 | UGG | 06-Aug-91 |
| | | | 04SS0401 | 04SS0401 | | EXPLOSIVES | 1,3,5-Trinitrobenzene | 1 | LW02 | | 0.589 | UGG | 06-Aug-91 |

Tab 2-2

Table 6.4-2 Line 3A (R04)
All Detectable Data

| SMMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|----------|----------|------------|-----------------|---------------------------|-----------|--------|------|--------|-------|-------------|
| R04 | CSO | CMPI | 04SS0401 | 04SS0401 | 0.5 | EXPLOSIVES | 2,4,6-Trinitrotoluene / a | | LW02 | | 910 | UGG | 06-Aug-91 |
| | | | | | | | 2,4-Dinitrotoluene | | LW02 | | 0.947 | UGG | 06-Aug-91 |
| | | | | | | | Cyclotetramethylenetetran | | LW02 | | 650 | UGG | 06-Aug-91 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW02 | | 210 | UGG | 06-Aug-91 |
| | | | | | | TAL_METAL | Barium | | JS12 | | 19.8 | UGG | 06-Aug-91 |
| | | | | | | | Cadmium | | JS12 | | 1.71 | UGG | 06-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 71.4 | UGG | 06-Aug-91 |
| | | | | | | | Lead | | JD21 | | 240 | UGG | 06-Aug-91 |
| | | | | | | | Mercury | | Y9 | | 0.553 | UGG | 06-Aug-91 |
| | | | | | | EXPLOSIVES | Cyclotetramethylenetetran | | LW02 | | 14 | UGG | 06-Aug-91 |
| | | | | | | | Nitrobenzene / Essence of | | LW02 | | 0.677 | UGG | 06-Aug-91 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW02 | | 92 | UGG | 06-Aug-91 |
| | | | | | | TAL_METAL | Arsenic | | B9 | | 4.97 | UGG | 06-Aug-91 |
| | | | | | | | Barium | | JS12 | | 229 | UGG | 06-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 23.1 | UGG | 06-Aug-91 |
| | | | | | | | Lead | | JD21 | | 44 | UGG | 06-Aug-91 |
| | | | | | | EXPLOSIVES | RDX / Cyclonite / Hexahyd | 1 | LW02 | | 0.514 | UGG | 06-Aug-91 |
| | | | | | | TAL_METAL | Arsenic | | B9 | | 7.54 | UGG | 06-Aug-91 |
| | | | | | | | Barium | | JS12 | | 89.8 | UGG | 06-Aug-91 |
| | | | | | | | Cadmium | | JS12 | | 1.81 | UGG | 06-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 23.7 | UGG | 06-Aug-91 |
| | | | | | | | Lead | | JD21 | | 400 | UGG | 06-Aug-91 |
| | | | | | | EXPLOSIVES | 1,3,5-Trinitrobenzene | | LW02 | | 5.09 | UGG | 07-Aug-91 |
| | | | | | | | 1,3-Dinitrobenzene | 1 | LW02 | | 0.327 | UGG | 07-Aug-91 |
| | | | | | | | 2,4,6-Trinitrotoluene / a | | LW02 | | 6600 | UGG | 07-Aug-91 |
| | | | | | | | 2,4-Dinitrotoluene | | LW02 | | 6.92 | UGG | 07-Aug-91 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW02 | | 1.3 | UGG | 07-Aug-91 |
| | | | | | | TAL_METAL | Arsenic | | B9 | | 4.35 | UGG | 07-Aug-91 |
| | | | | | | | Barium | | JS12 | | 71.2 | UGG | 07-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 16.2 | UGG | 07-Aug-91 |
| | | | | | | | Lead | | JD21 | | 28 | UGG | 07-Aug-91 |
| | | | | | | EXPLOSIVES | 2,4,6-Trinitrotoluene / a | | LW02 | | 21.6 | UGG | 07-Aug-91 |
| | | | | | | | Cyclotetramethylenetetran | | LW02 | | 1.98 | UGG | 07-Aug-91 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW02 | | 15.8 | UGG | 07-Aug-91 |
| | | | | | | TAL_METAL | Arsenic | | B9 | | 5.39 | UGG | 07-Aug-91 |

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Table 6.4-2 Line 3A (R04)
All Detectable Data

| SWMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|----------|----------|------------|-----------------|---------------------------|-----------|--------|------|--------|-------|-------------|
| R04 | CSO | SURF | 04SS1001 | 04SS1001 | 0.5 | TAL_METAL | Barium | | JS12 | | 218 | UGG | 07-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 34.3 | UGG | 07-Aug-91 |
| | | | | | | | Lead | | JD21 | | 49 | UGG | 07-Aug-91 |
| | | CMPH | 04SS1101 | 04SS1101 | | EXPLOSIVES | Cyclotramethylenetetran | | LW02 | | 51.8 | UGG | 07-Aug-91 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW02 | | 97 | UGG | 07-Aug-91 |
| | | | | | 1.5 | TAL_METAL | Arsenic | | B9 | | 5.4 | UGG | 07-Aug-91 |
| | | | | | 0.5 | | Barium | | JS12 | | 75.6 | UGG | 07-Aug-91 |
| | | | | | | | Chromium | | JS12 | | 26 | UGG | 07-Aug-91 |
| | | | | | | | Lead | | JD21 | | 280 | UGG | 07-Aug-91 |
| | | | | | | | Mercury | | Y9 | | 0.139 | UGG | 07-Aug-91 |
| | | | | | | TCL_BNA | Bis(2-ethylhexyl) phthala | | LM25 | GT | 6.2 | UGG | 07-Aug-91 |
| | SURF | | 04SS1201 | 04SS1201 | | TAL_METAL | Arsenic | | JD19 | | 1.29 | UGG | 13-Apr-93 |
| | BORE | | JAW-15 | SA501 | 8 | | Barium | | JS16 | | 165 | UGG | 13-Apr-93 |
| | | | | | | | Chromium | | JS16 | | 14.7 | UGG | 13-Apr-93 |
| | | | | | | | Lead | | JD17 | | 9.2 | UGG | 13-Apr-93 |
| | | | | | 53 | | Arsenic | | JD19 | | 0.808 | UGG | 27-Apr-93 |
| | | | JAW-16 | R04SA502 | | | Barium | | JS16 | | 43.4 | UGG | 27-Apr-93 |
| | | | | | | | Lead | | JD17 | | 13 | UGG | 27-Apr-93 |
| | | | JAW-17 | SA503 | 7 | | Arsenic | | JD19 | | 8.46 | UGG | 13-Apr-93 |
| | | | | | | | Barium | | JS16 | | 269 | UGG | 13-Apr-93 |
| | | | | | | | Chromium | | JS16 | | 17.3 | UGG | 13-Apr-93 |
| | | | | | | | Lead | | JD17 | | 12.9 | UGG | 13-Apr-93 |
| | | | | | 47.5 | | Arsenic | | JD19 | | 1.01 | UGG | 15-Apr-93 |
| | | | JAW-18 | SA504 | | | Barium | | JS16 | | 54.9 | UGG | 15-Apr-93 |
| | | | | | | | Chromium | | JS16 | | 6.41 | UGG | 15-Apr-93 |
| | | | | | | | Lead | | JD17 | | 4.1 | UGG | 15-Apr-93 |
| | | | | | | TCL_VOA | Acetone | | LM19 | | 0.044 | UGG | 14-Apr-93 |
| | | | JAW-19 | R04SA505 | 7 | TAL_METAL | Arsenic | | JD19 | | 9.78 | UGG | 14-Apr-93 |
| | | | | SA505 | | | Barium | | JS16 | | 152 | UGG | 14-Apr-93 |
| | | | | | | | Chromium | | JS16 | | 21 | UGG | 14-Apr-93 |
| | | | | | | | Lead | | JD17 | | 29 | UGG | 14-Apr-93 |
| | | | | | | | Arsenic | | JD19 | | 7.68 | UGG | 14-Apr-93 |
| | | | JAW-20 | SA506 | 6 | | Barium | | JS16 | | 203 | UGG | 14-Apr-93 |
| | | | | | | | Chromium | | JS16 | | 20.7 | UGG | 14-Apr-93 |
| | | | | | | | Lead | | JD17 | | 12 | UGG | 14-Apr-93 |

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Table 6.4-2 Line 3A (R04)
All Detectable Data

| SWMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|---------|----------|------------|-----------------|---------------------------|-----------|--------|------|--------|-------|-------------|
| R04 | CSO | BORE | JAW-21 | SA507 | 59 | TAI_METAL | Arsenic | | JD19 | | 1.74 | UGG | 13-Apr-93 |
| | | | | | | | Barium | | JS16 | | 8.76 | UGG | 13-Apr-93 |
| | | | | | | | Lead | | JD17 | | 3.99 | UGG | 13-Apr-93 |
| | | JAW-22 | SA508 | | 17 | | Arsenic | | JD19 | | 5.1 | UGG | 14-Apr-93 |
| | | | | | | | Barium | | JS16 | | 64.2 | UGG | 14-Apr-93 |
| | | | | | | | Chromium | | JS16 | | 11.9 | UGG | 14-Apr-93 |
| | | | | | | | Lead | | JD17 | | 7.4 | UGG | 14-Apr-93 |
| | | R04SA1701 | SA1701 | | 1 | EXPLOSIVES | 2,4,6-Trinitrotoluene / a | 7 | LW12 | | 2.75 | UGG | 27-Oct-92 |
| | | R04SA2101 | SA2101 | | | | 1,3,5-Trinitrobenzene | | LW12 | | 1.29 | UGG | 07-Nov-92 |
| | | | | | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 10.3 | UGG | 07-Nov-92 |
| | | | | | | | Cyclotetramethylenetetran | | LW12 | | 76 | UGG | 07-Nov-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 340 | UGG | 07-Nov-92 |
| | | R04SA2701 | SA2701 | | 2 | | 1,3,5-Trinitrobenzene | | LW12 | | 3.51 | UGG | 09-Nov-92 |
| | | | | | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 190 | UGG | 09-Nov-92 |
| | | R04SA2801 | SA2801 | | 3 | | 1,3,5-Trinitrobenzene | | LW12 | | 4.41 | UGG | 17-Nov-92 |
| | | | | | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 220 | UGG | 17-Nov-92 |
| | | | | | | | Cyclotetramethylenetetran | | LW12 | | 32.5 | UGG | 17-Nov-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 210 | UGG | 17-Nov-92 |
| | | R04SA3701 | SA3701 | | 2 | TAI_METAL | Arsenic | | JD19 | | 15 | UGG | 17-Nov-92 |
| | | | | | | | Barium | | JS16 | | 341 | UGG | 17-Nov-92 |
| | | | | | | | Chromium | | JS16 | | 25.8 | UGG | 17-Nov-92 |
| | | | | | | | Lead | | JD17 | | 21 | UGG | 17-Nov-92 |
| | | R04SA4101 | SA4101 | | 1 | | Arsenic | | JD19 | | 10.3 | UGG | 18-Nov-92 |
| | | | | | | | Barium | | JS16 | | 148 | UGG | 18-Nov-92 |
| | | | | | | | Chromium | | JS16 | | 9.18 | UGG | 18-Nov-92 |
| | | | | | | | Lead | | JD17 | | 23 | UGG | 18-Nov-92 |
| | | | | | | | Selenium | | JD15 | | 0.49 | UGG | 18-Nov-92 |
| | | R04SA4301 | SA4301 | | | | Arsenic | | JD19 | | 14 | UGG | 19-Nov-92 |
| | | | | | | | Barium | | JS16 | | 263 | UGG | 19-Nov-92 |
| | | | | | | | Chromium | | JS16 | | 20.8 | UGG | 19-Nov-92 |
| | | | | | | | Lead | | JD17 | | 20 | UGG | 19-Nov-92 |
| | | | | | | | Mercury | | JB01 | | 0.0547 | UGG | 19-Nov-92 |
| | | | | | | | Silver | | JS16 | | 40 | UGG | 19-Nov-92 |
| | | R04SA4401 | SA4401 | | | | Arsenic | | JD19 | | 10 | UGG | 19-Nov-92 |
| | | | | | | | Barium | | JS16 | | 226 | UGG | 19-Nov-92 |

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Table 6.4-2 Line 3A (R04)
All Detectable Data

| SWMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|-----------|----------|------------|-----------------|----------------------------|-----------|--------|------|--------|-------|-------------|
| R04 | CSO | BORE | R04SA401 | SA4401 | 1 | TAL_METAL | Chromium | | JS16 | | 16.6 | UGG | 19-Nov-92 |
| | | | | | | | Lead | | JD17 | | 23 | UGG | 19-Nov-92 |
| | | SURF | R04SS0501 | SS0501 | 0.5 | EXPLOSIVES | 2,4,6-Trinitrotoluene / a | | LW12 | | 5.25 | UGG | 13-Oct-92 |
| | | | | | | | Cyclotetramethylnitrotrian | | LW12 | | 86 | UGG | 13-Oct-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 190 | UGG | 13-Oct-92 |
| | | | R04SS0601 | SS0601 | | | 1,3,5-Trinitrobenzene | | LW12 | | 9.59 | UGG | 13-Oct-92 |
| | | | | | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 13000 | UGG | 13-Oct-92 |
| | | | | | | | 2,4-Dinitrotoluene | | LW12 | | 13.2 | UGG | 13-Oct-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 3.88 | UGG | 13-Oct-92 |
| | | | | | | | 1,3,5-Trinitrobenzene | | LW12 | | 17.9 | UGG | 13-Oct-92 |
| | | | R04SS0801 | SS0801 | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 430 | UGG | 13-Oct-92 |
| | | | | | | | 2,4-Dinitrotoluene | | LW12 | | 0.732 | UGG | 13-Oct-92 |
| | | | | | | | Cyclotetramethylnitrotrian | | LW12 | | 1400 | UGG | 13-Oct-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 8900 | UGG | 13-Oct-92 |
| | | | R04SS0901 | SS0901 | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 1.3 | UGG | 13-Oct-92 |
| | | | | | | | Cyclotetramethylnitrotrian | | LW12 | | 4.86 | UGG | 13-Oct-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 17.2 | UGG | 13-Oct-92 |
| | | | | | | | Cyclotetramethylnitrotrian | 0 | LW12 | | 1.6 | UGG | 13-Oct-92 |
| | | | R04SS1001 | SS1001 | | | 1,3,5-Trinitrobenzene | | LW12 | | 21 | UGG | 20-Oct-92 |
| | | | R04SS1101 | SS1101 | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 74 | UGG | 20-Oct-92 |
| | | | | | | | Cyclotetramethylnitrotrian | | LW12 | | 910 | UGG | 20-Oct-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 1900 | UGG | 20-Oct-92 |
| | | | R04SS1201 | SS1201 | | | Cyclotetramethylnitrotrian | | LW12 | | 1.01 | UGG | 20-Oct-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 0.852 | UGG | 20-Oct-92 |
| | | | R04SS1301 | SS1301 | | TAL_METAL | Arsenic | | JD19 | | 4.99 | UGG | 13-Oct-92 |
| | | | | | | | Barium | | JS16 | | 46.3 | UGG | 13-Oct-92 |
| | | | | | | | Cadmium | | JS16 | | 0.966 | UGG | 13-Oct-92 |
| | | | | | | | Chromium | | JS16 | | 10.1 | UGG | 13-Oct-92 |
| | | | | | | | Lead | | JS16 | | 114 | UGG | 13-Oct-92 |
| | | | | | | | Arsenic | | JD19 | | 5.37 | UGG | 13-Oct-92 |
| | | | | | | | Barium | | JS16 | | 161 | UGG | 13-Oct-92 |
| | | | R04SS1401 | SS1401 | | | Cadmium | | JS16 | | 2.52 | UGG | 13-Oct-92 |
| | | | | | | | Chromium | | JS16 | | 223 | UGG | 13-Oct-92 |
| | | | | | | | Lead | | JS16 | | 1710 | UGG | 13-Oct-92 |
| | | | | | | | Mercury | | JB01 | | 4 | UGG | 13-Oct-92 |

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Table 6.4-2 Line 3A (R04)
All Detectable Data

| SWMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|-----------|----------|------------|-----------------|---------------------------|-----------|--------|------|--------|-------|-------------|
| R04 | CSO | SURF | R04SS1401 | SS1401 | 0.5 | TAL_METAL | Selenium | | JD15 | | 1.4 | UGG | 13-Oct-92 |
| | | | R04SS1501 | SS1501 | | | Arsenic | | JD19 | | 8.38 | UGG | 13-Oct-92 |
| | | | | | | | Barium | | JS16 | | 196 | UGG | 13-Oct-92 |
| | | | | | | | Chromium | | JS16 | | 35.9 | UGG | 13-Oct-92 |
| | | | | | | | Lead | | JS16 | | 197 | UGG | 13-Oct-92 |
| | | | | | | | Mercury | | JB01 | | 0.725 | UGG | 13-Oct-92 |
| | | | R04SS1601 | SS1601 | | EXPLOSIVES | 2,4,6-Trinitrotoluene / a | 7 | LW12 | | 0.565 | UGG | 27-Oct-92 |
| | | | R04SS1901 | SS1901 | | TAL_METAL | Arsenic | | JD19 | | 8.59 | UGG | 20-Oct-92 |
| | | | | | | | Barium | | JS16 | | 136 | UGG | 20-Oct-92 |
| | | | | | | | Chromium | | JS16 | | 17.7 | UGG | 20-Oct-92 |
| | | | | | | | Lead | | JS16 | | 41.8 | UGG | 20-Oct-92 |
| | | | | | | | Arsenic | | JD19 | | 3.88 | UGG | 20-Oct-92 |
| | | | | | | | Barium | | JS16 | | 77.3 | UGG | 20-Oct-92 |
| | | | | | | | Chromium | | JS16 | | 11 | UGG | 20-Oct-92 |
| | | | R04SS2001 | SS2001 | | | Lead | | JS16 | | 28.6 | UGG | 20-Oct-92 |
| | | | | | | | Silver | | JS16 | | 28 | UGG | 20-Oct-92 |
| | | | R04SS2201 | SS2201 | | EXPLOSIVES | 1,3,5-Trinitrobenzene | | LW12 | | 0.815 | UGG | 07-Nov-92 |
| | | | | | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 3.15 | UGG | 07-Nov-92 |
| | | | | | | | Cyclotetramethylenetetran | | LW12 | | 180 | UGG | 07-Nov-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 150 | UGG | 07-Nov-92 |
| | | | R04SS2301 | SS2301 | | | 1,3,5-Trinitrobenzene | | LW12 | | 15.8 | UGG | 07-Nov-92 |
| | | | | | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 19000 | UGG | 07-Nov-92 |
| | | | | | | | 2,4-Dinitrotoluene | | LW12 | | 1.9 | UGG | 07-Nov-92 |
| | | | | | | | Cyclotetramethylenetetran | | LW12 | | 1700 | UGG | 07-Nov-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 11000 | UGG | 07-Nov-92 |
| | | | R04SS2501 | SS2501 | | TAL_METAL | Arsenic | | JD19 | | 7.19 | UGG | 22-Oct-92 |
| | | | | | | | Barium | | JS16 | | 134 | UGG | 22-Oct-92 |
| | | | | | | | Chromium | | JS16 | | 20.6 | UGG | 22-Oct-92 |
| | | | | | | | Lead | | JS16 | | 33.5 | UGG | 22-Oct-92 |
| | | | | | | | Silver | | JS16 | | 0.663 | UGG | 22-Oct-92 |
| | | | R04SS3001 | SS3001 | | EXPLOSIVES | Cyclotetramethylenetetran | | LW12 | | 32.7 | UGG | 17-Nov-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 2.08 | UGG | 17-Nov-92 |
| | | | R04SS3301 | SS3301 | | TAL_METAL | Arsenic | | JD19 | | 7.21 | UGG | 07-Nov-92 |
| | | | | | | | Barium | | JS16 | | 203 | UGG | 07-Nov-92 |
| | | | | | | | Chromium | | JS16 | | 16.5 | UGG | 07-Nov-92 |

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Table 6.4-2 Line 3A (R04)
All Detectable Data

| SWMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|-----------|----------|------------|-----------------|----------|-----------|--------|------|--------|-------|-------------|
| R04 | CSO | SURF | R04SS3301 | SS3301 | 0.5 | TAL_METAL | Lead | | JS16 | | 26.2 | UGG | 07-Nov-92 |
| | | | | | | | Silver | | JS16 | | 11 | UGG | 07-Nov-92 |
| | | | R04SS3401 | SS3401 | | | Arsenic | | JD19 | | 8.61 | UGG | 07-Nov-92 |
| | | | | | | | Barium | | JS16 | | 195 | UGG | 07-Nov-92 |
| | | | | | | | Cadmium | | JS16 | | 1.56 | UGG | 07-Nov-92 |
| | | | | | | | Chromium | | JS16 | | 18.6 | UGG | 07-Nov-92 |
| | | | | | | | Lead | | JS16 | | 31.2 | UGG | 07-Nov-92 |
| | | | | | | | Selenium | | JD15 | | 0.425 | UGG | 07-Nov-92 |
| | | | | | | | Silver | | JS16 | | 69 | UGG | 07-Nov-92 |
| | | | R04SS3501 | SS3501 | | | Arsenic | | JD19 | | 13 | UGG | 09-Nov-92 |
| | | | | | | | Barium | | JS16 | | 195 | UGG | 09-Nov-92 |
| | | | | | | | Cadmium | | JS16 | | 2.69 | UGG | 09-Nov-92 |
| | | | | | | | Chromium | | JS16 | | 62.9 | UGG | 09-Nov-92 |
| | | | | | | | Lead | | JS16 | | 36.9 | UGG | 09-Nov-92 |
| | | | | | | | Mercury | | JB01 | | 0.0499 | UGG | 09-Nov-92 |
| | | | | | | | Silver | | JS16 | | 310 | UGG | 09-Nov-92 |
| | | | R04SS3601 | SS3601 | | | Arsenic | | JD19 | | 4.44 | UGG | 09-Nov-92 |
| | | | | | | | Barium | | JS16 | | 70.2 | UGG | 09-Nov-92 |
| | | | | | | | Cadmium | | JS16 | | 2.24 | UGG | 09-Nov-92 |
| | | | | | | | Chromium | | JS16 | | 28.3 | UGG | 09-Nov-92 |
| | | | | | | | Lead | | JS16 | | 127 | UGG | 09-Nov-92 |
| | | | | | | | Silver | | JS16 | | 350 | UGG | 09-Nov-92 |
| | | | R04SS3801 | SS3801 | | | Arsenic | | JD19 | | 9.64 | UGG | 17-Nov-92 |
| | | | | | | | Barium | | JS16 | | 223 | UGG | 17-Nov-92 |
| | | | | | | | Cadmium | | JS16 | | 3.24 | UGG | 17-Nov-92 |
| | | | | | | | Chromium | | JS16 | | 102 | UGG | 17-Nov-92 |
| | | | | | | | Lead | | JS16 | | 62 | UGG | 17-Nov-92 |
| | | | | | | | Mercury | | JB01 | | 1.5 | UGG | 17-Nov-92 |
| | | | | | | | Selenium | | JD15 | | 1.3 | UGG | 17-Nov-92 |
| | | | | | | | Silver | | JS16 | | 3.12 | UGG | 17-Nov-92 |
| | | | R04SS3901 | SS3901 | | | Arsenic | | JD19 | | 8.16 | UGG | 12-Nov-92 |
| | | | | | | | Barium | | JS16 | | 202 | UGG | 12-Nov-92 |
| | | | | | | | Chromium | | JS16 | | 15.8 | UGG | 12-Nov-92 |
| | | | | | | | Lead | | JS16 | | 37.4 | UGG | 12-Nov-92 |
| | | | | | | | Selenium | | JD15 | | 0.382 | UGG | 12-Nov-92 |

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Table 6.4-2 Line 3A (R04)

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Table 6.4-2 Line 3A (R04)
All Detectable Data

| SWMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|------------|----------|------------|-----------------|---------------------------|-----------|--------|------|--------|-------|-------------|
| R04 | CSO | BORE | SU20SA0102 | SA0102 | 2.8 | EXPLOSIVES | RDX / Cyclonite / Hexahyd | | LW12 | | 1.63 | UGG | 16-Sep-92 |
| | | | | | | TAL_METAL | Arsenic | | JD19 | | 6.74 | UGG | 16-Sep-92 |
| | | | | | | | Barium | | JS16 | | 237 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 16.2 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JD17 | | 19 | UGG | 16-Sep-92 |
| | | | | | | | Mercury | 7 | JB01 | | 0.27 | UGG | 16-Sep-92 |
| | | | | | | | Silver | | JS16 | | 0.838 | UGG | 16-Sep-92 |
| | | | | | | | Arsenic | | JD19 | | 9.51 | UGG | 16-Sep-92 |
| | | | SU20SA0202 | SA0202 | | | Barium | | JS16 | | 200 | UGG | 16-Sep-92 |
| | | | | | | | Cadmium | | JS16 | | 5 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 18.8 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JD17 | | 32 | UGG | 16-Sep-92 |
| | | | | | | | Selenium | | JD15 | | 0.434 | UGG | 16-Sep-92 |
| | | | | | | | Silver | | JS16 | | 0.818 | UGG | 16-Sep-92 |
| | | | | | 1 | EXPLOSIVES | 2,4,6-Trinitrotoluene / a | | LW12 | | 2.31 | UGG | 16-Sep-92 |
| | | | SU20SA0302 | SA0302 | | TAL_METAL | Arsenic | | JD19 | | 8.21 | UGG | 16-Sep-92 |
| | | | | | | | Barium | | JS16 | | 282 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 16.4 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JD17 | | 16 | UGG | 16-Sep-92 |
| | | | | | | | Selenium | | JD15 | | 0.556 | UGG | 16-Sep-92 |
| | | | | | 0.5 | EXPLOSIVES | 1,3,5-Trinitrobenzene | | LW12 | | 18.1 | UGG | 16-Sep-92 |
| | | | | | | | 2,4,6-Trinitrotoluene / a | | LW12 | | 5200 | UGG | 16-Sep-92 |
| | | | | | | | 2,4-Dinitrotoluene | | LW12 | | 11.7 | UGG | 16-Sep-92 |
| | | | | | | | RDX / Cyclonite / Hexahyd | | LW12 | | 3.03 | UGG | 16-Sep-92 |
| | | | | | | TAL_METAL | Arsenic | | JD19 | | 8.16 | UGG | 16-Sep-92 |
| | | | | | | | Barium | | JS16 | | 140 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 16.6 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JS16 | | 294 | UGG | 16-Sep-92 |
| | | | | | | EXPLOSIVES | 2,4,6-Trinitrotoluene / a | | LW12 | | 21.9 | UGG | 16-Sep-92 |
| | | | SU20SS0201 | SS0201 | | TAL_METAL | Arsenic | | JD19 | | 6.52 | UGG | 16-Sep-92 |
| | | | | | | | Barium | | JS16 | | 156 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 19.4 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JS16 | | 289 | UGG | 16-Sep-92 |
| | | | | | | EXPLOSIVES | 2,4,6-Trinitrotoluene / a | | LW12 | | 5.11 | UGG | 16-Sep-92 |
| | | | SU20SS0301 | SS0301 | | TAL_METAL | Arsenic | | JD19 | | 5.9 | UGG | 16-Sep-92 |

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Table 6.4-2 Line 3A (R04)
All Detectable Data

| SWMU | MEDIA TYPE | SITE TYPE | SITE ID | FIELD ID | DEPTH (ft) | PARAMETER GROUP | ANALYTE | FLAG CODE | METHOD | BOOL | RESULT | UNITS | SAMPLE DATE |
|------|------------|-----------|------------|----------|------------|-----------------|--------------------|-----------|--------|------|--------|-------|-------------|
| R04 | CSO | SURF | SU205S0301 | SS0301 | 0.5 | TAL_METAL | Barium | | JS16 | | 129 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 10.8 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JS16 | | 34.6 | UGG | 16-Sep-92 |
| | | BORE | SU215A0102 | SA0102 | 3.3 | | Arsenic | | JD19 | | 13.1 | UGG | 16-Sep-92 |
| | | | | | | | Barium | | JS16 | | 229 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 23.1 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JD17 | | 14.5 | UGG | 16-Sep-92 |
| | | | SU215A0202 | SA0202 | | | Arsenic | | JD19 | | 5.24 | UGG | 16-Sep-92 |
| | | | | | | | Barium | | JS16 | | 190 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 15.4 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JD17 | | 12 | UGG | 16-Sep-92 |
| | | SURF | SU215S0101 | SS0101 | 0.5 | | Arsenic | | JD19 | | 7.45 | UGG | 16-Sep-92 |
| | | | | | | | Barium | | JS16 | | 82.9 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 9.41 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JS16 | | 529 | UGG | 16-Sep-92 |
| | | | SU215S0201 | SS0201 | | | Arsenic | | JD19 | | 3.98 | UGG | 16-Sep-92 |
| | | | | | | | Barium | | JS16 | | 65.7 | UGG | 16-Sep-92 |
| | | | | | | | Chromium | | JS16 | | 10.6 | UGG | 16-Sep-92 |
| | | | | | | | Lead | | JS16 | | 26 | UGG | 16-Sep-92 |
| CSW | SUMP | | 04SW1401 | 04SW1401 | | EXPLOSIVES | 2,4-Dinitrotoluene | | UW01 | | 0.78 | UGL | 06-Aug-91 |
| | | | | | | | 2,6-Dinitrotoluene | | UW01 | | 1.14 | UGL | 06-Aug-91 |
| | | | R04SW0201 | SW0201 | 0 | TAL_METAL | Barium | | SS10 | | 139 | UGL | 09-Nov-92 |
| | | | | | | | Lead | | SD20 | | 17.9 | UGL | 09-Nov-92 |

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SECTION 01451A

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07/01; Omaha Rev. 10/01

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SECTION 01451A

CONTRACTOR QUALITY CONTROL 07/01; Omaha Rev. 10/01

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|---|
| ASTM D 3740 | (2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction |
| ASTM E 329 | (2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction |

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified

deficiencies have been corrected.

- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.3 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting.

During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The

Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a construction person with a minimum of 5 years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

A staff shall be maintained under the direction of the CQC system manager to perform all QC activities. The staff must be of sufficient size to ensure adequate QC coverage of all work phases, work shifts, and work crews involved in the construction. These personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned QC responsibilities and must be allowed sufficient time to carry out these responsibilities. The QC plan will clearly state the duties and responsibilities of each staff member.

3.4.4 Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered at each of the four area offices in the Omaha District according to the following revolving training schedule:

| | | |
|-------------------------|----------------|--------------------------|
| <u>Badger Area</u> | First Session | Between 15 & 25 April |
| | Second Session | Between 15 & 25 October |
| Point of Contact | Roy Brewer | (608) 388-4780 |
| <u>Black Hills Area</u> | First Session | Between 1 & 10 March |
| | Second Session | Between 1 & 10 September |
| Point of Contact | Dwight Pochant | (605) 923-2983 |
| <u>Fort Crook Area</u> | First Session | Between 15 & 25 January |
| | Second Session | Between 15 & 25 July |
| Point of Contact | Al Kreisler | (402) 293-2540 |

| | | |
|-----------------------|----------------|-------------------------|
| <u>Rocky Mountain</u> | First Session | Between 1 & 10 June |
| | Second Session | Between 1 & 10 December |
| Point of Contact | Paul Jendzejec | (719) 556-4184 |

The exact date and location for the sessions will be determined approximately 30 days in advance of the training. The cost of training is presently established at \$25 to be paid by each student in advance of the training. For information about a particular session, the best source is the point of contact listed above.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. Prior to the preparatory meeting for each definable feature of work, the Contractor shall provide all technical references (i.e. building codes, life safety codes, etc.) referenced in the project specifications for feature(s) of work being addressed at the preparatory meeting. These technical references shall be onsite and available for use by Contractor and Government personnel before the preparatory meeting is held and maintained until the feature(s) of work is/are accepted by the Government.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.

- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing when specified. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and

disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed the actual cost for the recheck to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, f.o.b., at the following address:

For delivery by mail: Commander and Director
U.S. Army Engineer Waterways Experiment Station
Attn: CEWES-GS
3909 Hallsferry Road
Vicksburg, Mississippi 39180-6199

For other deliveries: Commander and Director
U.S. Army Engineer Waterways Experiment Station
Attn: CEWES-GS
3909 Hallsferry Road
Vicksburg, Mississippi 39180-6199

Coordination for each specific test, exact delivery location, and dates will be made through the Resident or Area (as directed) Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION.

The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected.

Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control

phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Contracting Officer's Representative on the first day following the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms enclosed at the end of this section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

DAILY QUALITY CONTROL REPORT

Weather: _____ Precipitation: _____ in. _____ Temp: _____ Min. _____ Max. _____

| NUMBER: | TRADE | : | HOURS | : | EMPLOYER | : | LOCATION/DESCRIPTION WORK |
|---------|----------------|---|-------|---|-----------------------|---|-----------------------------|
| 1 | Electrician | : | 40 | : | ABC Electric Co. | : | 123 Main St, City, State |
| 2 | Plumber | : | 30 | : | XYZ Plumbing | : | 456 Oak Ave, City, State |
| 3 | Carpenter | : | 20 | : | DEF Construction | : | 789 Pine Rd, City, State |
| 4 | Painter | : | 15 | : | GHI Painting | : | 101 Elm St, City, State |
| 5 | Roofing | : | 25 | : | JKL Roofing | : | 202 Maple Dr, City, State |
| 6 | HVAC | : | 10 | : | MNO Heating & Cooling | : | 303 Birch Ln, City, State |
| 7 | Landscaping | : | 10 | : | PQR Lawn Care | : | 404 Cedar Ct, City, State |
| 8 | Auto Detailing | : | 10 | : | RST Car Wash | : | 505 Walnut St, City, State |
| 9 | House Cleaning | : | 10 | : | UVW Cleaning Services | : | 606 Spruce Ave, City, State |
| 10 | Handyman | : | 10 | : | XYZ Handyman | : | 707 Willow Rd, City, State |

[illegible][illegible]

3. Work Performed Today: (Indicate location and description of work performed by prime and/or subcontractors. When network analysis is used, identify work by NAS activity number).

[illegible]

4. Control Activities Performed:

Preparatory Inspections: (Identify feature of work and attach minutes).

Initial Inspections: (Identify feature of work and attach minutes).

Follow-Up Inspections: (List inspections performed, results of inspection compared to specification requirements, and corrective actions taken when deficiencies are noted).

[illegible]

5. Tests Performed and Test Results: (Identify test requirement by paragraph number in specifications and/or sheet number in plans).

[illegible]

6. Material Received: (Note inspection results and storage provided).

7. Submittals Reviewed:

| (a) Submittal No. | (b) Spec/Plan Reference | (c) By Whom | (d) Action |
|-------------------|-------------------------|-------------|------------|
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |

8. Offsite Surveillance Activities, Including Action Taken:

9. Job Safety: (List items checked, results, instructions and corrective actions taken).

10. Remarks: (Instructions received or given. Conflict(s) in Plans and/or specifications. Delays encountered.).

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as may be noted above.

CQC System Manager

Date

-- End of Section --

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SECTION 01511

IOWA AAP PLANT CONSTRUCTION SECURITY REQUIREMENTS

07/00

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PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section Table of Contents --

SECTION 01511

IOWA AAP PLANT CONSTRUCTION SECURITY REQUIREMENTS
07/00

PART 1 GENERAL DESCRIPTION

The following access procedures (from the Security Department) are required by the American Ordnance LLC Iowa Army Ammunition Plant (IAAP) located in Burlington, Iowa.

1.1 VEHICLE ACCESS

- A. Vehicle owners must have and maintain liability insurance and have on their person a current valid state drivers license if they are driving.
- B. Contractor owned and/or operated vehicles, which of necessity must enter posted limited areas. (Lines or Yards), will be permitted to do so if they meet one of the following requirements.
 - (1) They are clearly and conspicuously marked with the name of the contractor operating the vehicle.
 - (2) They have in their possession a prominently displayed "Limited Area Vehicle Pass" which is obtainable from the Visitor Welcome Center in the Administration Building and which will be issued upon proof of need.
- C. Contractors shall be responsible for reporting to the shift Supervisor, Security Headquarters, Ext. 7912 or 7414, any explosives that he or his employees bring on the installation for any purpose. This information shall contain: Type of explosive, amount of explosive, where stored, intended use, and approximate date(s) of use.

1.2 MOTORCYCLES

- A. Privately - owned, two wheeled or tricycle type of motor vehicles operated on this installation must have and maintain liability insurance, and operators will be licensed in accordance with state laws. Additionally, all person operating or riding as a passenger on such vehicles must meet the following requirements.
 - (1) They must wear properly fastened DOT approved helmet.
 - (2) They must wear clear goggles or have face shield attached to helmet.
 - (3) They must wear full fingered gloves, long sleeved shirt or jacket, high visibility garment (bright color for day and reflective for night,) boots or shoes.
 - (4) The vehicle must have two rear view mirrors, one on each side of the bars.
 - (5) Motorcycles must be operated with headlights on at all times.

(6) Motorcycles are permitted in the general area only.

1.3 TRAFFIC CONTROL

- A. Construction personnel will be governed by the same rules and regulations that apply to regular Plant employees, and will be subjected to traffic citations for violations, issued by the Security Department.
- B. Radar is used for speed control of Plant roads, and violators are referred to U.S. Magistrate for disposition. Speed requirements are posted throughout the Plant as follows:
 - (1) Residential Area: 25 MPH or as posted
 - (2) General Area: Improved Roads - 45 MPH
Darkness & Gravel Roads - 35 MPH
Unimproved Roads - 35 MPH Other - as posted
 - (3) Yards and Lines: 25 MPH or as posted
 - (4) Shop Area: 20 MPH
- C. Switch engines (trains) do not stop for motor vehicles at rail crossings. Extreme caution should be used at all crossings. Switch engines, equipped with rotating light beacons for increased visibility, will sound a whistle upon approaching a crossing. During peak traffic periods, selected crossings will be flagged. The right-of-way belongs to rail switch engines; motor vehicles must yield.

1.4 PROHIBITED ARTICLES

- A. The following listed articles are prohibited within the perimeter fence of the Iowa Army Ammunition Plant.

PROHIBITED IN LIMITED AREAS WITHOUT A VALID PROHIBITED ARTICLE PASS

Photographic Equipment
Copying or Reproduction Devices
Tape Recorders
Surreptitious Listening Devices
Binoculars

PROHIBITED ALL AREAS

Firearms and Ammunition
Strike-anywhere matches
Explosives
Intoxicants
Narcotics
Drugs

- B. In addition to the above, matches, lighters or flammable items are not permitted in any fenced limited or restricted areas to include all Lines and Yards unless you have coordinated with the Safety & Fire Departments.

1.5 BADGES

- A. Subsequent to the award of the construction contract, each Contractor will be supplied construction-type badges to be issued to each employee engaged on the project. The contractor shall submit a list of

personnel, the areas of construction and date project will terminated to the Visitor Welcome Center (Administration Building) before their badges are fabricated. Authorized Badge/Key Listing (SEC-71) is provided for this purpose and is available at the Visitor Welcome Center. They will not be badged without this notification.

- B. The construction badges will be worn on the outer garment. Employees performing duties where badges are a safety hazard or in which badge damage or destruction could result will have the badge in their possession, or placed in a designated location in lieu of wearing.
- C. Badges should not be worn while off the installation and should be safeguarded so as to prevent loss and unauthorized use. The badges are required to be turned into the Visitor Welcome Center (Administration Building) upon completion of the project. A charge of \$10.00 will be assessed the Contractor for each lost or unaccounted for badge.
- D. Lost badges will be reported to Guard Headquarters or the Visitor Welcome Center immediately.

1.6 KEY AND LOCK CONTROL

- A. An authorized representative of the contractor must designate on the Authorized Badge/Key Listing, SEC-71, those employees designated as requiring access to a yard gate key.
- B. Construction personnel must check out a yard gate key from Security Headquarters and admit themselves into storage yards. Individuals who draw and sign for a key will be held responsible for securing the yard gate. The number of persons authorized to draw a yard gate key should be kept at a minimum and indicated in advance.
- C. If an individual would lose a key they will be charged replacement cost for rekeying. The approximate cost would be over \$1,000.
- D. Yard gate keys must not be removed from the installation and must be returned to Security Headquarters by the user prior to leaving the plant.

1.7 RESTRICTIONS

- A. During off shift hours and weekends, production lines are secured. Access is permitted by a guard. Please coordinate entry and exit with the on duty security supervisor.
- B. Those contractors requiring deliveries, (Example: concrete, supplies, equipment etc.) shall coordinate in advance the arrival of these deliveries with the Security Department. Failure to do so may result in untimely delays to your operation.

1.8 SEARCHES

- A. All construction vehicles will be checked for contraband items upon entry and exit to any manufacturing Line and Yard D.
- B. In addition, all individuals entering this installation are subject to search of their person, property and vehicles as a condition of entry.

- C. Also, random searches are conducted upon entry or exit at the perimeter gates and the general area at any time.

1.9 AMBULANCE SERVICE

- A. Ambulances are operated by the Fire Department Emergency Medical Technicians (EMT).
- B. To obtain ambulance service in the work or operating areas of the installation, dial "17" on the IAAAP phone system.
- C. Construction personnel working in isolated areas away from a phone may contact a guard who, in turn, will radio for ambulance services.

1.10 PLANT STRIKE

In the event of a Plant Strike, all construction personnel and vehicles will enter the Plant area through Gate 1 only. Gate 1 is located at the west end of West Avenue (Burlington).

1.11 DESTRUCTION OF GOVERNMENT PROPERTY

Individuals will not deface, destroy or disturb any notice, sign fence, building shrub, tree or plant vegetation unless prior authorization is granted.

1.12 PLANT ENTRANCES (PERIMETER GATES 1,2,3,4 AND 5)

1.12.1 GATE 1

(Located at the west end of Burlington's West Avenue, allows entrance to the east-southeast section of the plant).

Gate 1 is used only for emergency and special requirements. In the event it is used for construction purposes, construction trucks and private vehicles will use Gate 1 exclusively.

The hours of operation of Gate 1 will be established as necessary to accommodate the construction requirements.

1.12.2 GATE 2

(Located at the west end of Burlington's Agency Street on Highway 406, allows entrance to the east section of the plant during designated shift change.)

Gate 2 is operated for the purpose of private passenger vehicles, pickup trucks, camper type pickup trucks, motor home type campers and two-wheeled vehicles when used for transportation purposes.

1.12.3 GATE 3

(Located on Highway 34 approximately 2 miles east of Middletown). Contact Guard Headquarters for hours of operation (manned) of Gate 3.

Gate 3 is operated for the purpose of commercial truck traffic, government trucks, construction vehicles, vendor deliveries, lessees and equipment.

Privately owned construction vehicles or pedestrians are not permitted to

enter or exit the area by way of Gate 3.

Construction personnel entering or leaving the plant area in private vehicles must use Gates 2, 4, or 5.

1.12.4 GATE 4

(Middletown entrance, located near Security headquarters off Highway 34 - Main Administration Entrance).

Gate 4 is operated 24 hours a day on Monday through Friday. Contact Guard Headquarters for hours of operation during weekends and holidays.

Gate 4 is the general purpose gate operated primarily for passenger type vehicles, pickup trucks, camper type pickup trucks, motor home campers and two-wheeled vehicles.

1.12.5 GATE 5

(Augusta entrance, located near the town of Augusta and allows entrance to the extreme southern section of the plant during designated shift changes.)

Vehicles as described in gate 2 above will be permitted when used for transportation.

1.12.6 TELEPHONE NUMBERS

| | |
|--|------------------|
| Iowa Army Ammunition Plant | 753-XXXX |
| Chief of Security | EXT 7142 |
| Officer on Duty, Security Headquarters | EXT 7912 or 7414 |
| Fire or Ambulance | EXT 17 |
| Safety Representative | EXT 7013 |
| Industrial Hygiene | EXT 7434 |
| Environmental Representative | EXT 7721 |
| Gate 3 | EXT 7291 |
| Gate 4 | EXT 7484 |

NOTE:

The Security Department will make every effort to accommodate contractors request. However, prior coordination is the key element. Current responsibilities require a clear, concise schedule in order for us to properly assist you.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

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08/99

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SECTION 01560

(IOWA) NPDES PERMIT REQUIREMENTS
FOR STORM WATER DISCHARGES
FROM CONSTRUCTION SITES
08/99

PART 1 GENERAL

Attachments:

Copy of the Iowa Department of Natural Resources National
Pollutant Discharge Elimination System (NPDES) General Permit
No. 2
Notice of Intent For NPDES Coverage Under General Permit
Understanding Storm Water NPDES Permitting Requirements
How To File A Complete Notice Of Intent
Public Notice Of Storm Water Discharge

1.1 REFERENCES (Not Applicable)

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation;
submittals not having a "G" designation are for information only. When
used, a designation following the "G" designation identifies the office
that will review the submittal for the Government. The following shall be
submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-05 Design Data

Notice of Intent; .

Notice of Discontinuation; .

SD-06 Test Reports

Reports; .

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall be responsible for implementing the terms and
requirements of the attached Iowa Department of Natural Resources National
Pollutant Discharge Elimination System (NPDES) General Permit No. 2 and the
Storm Water Pollution Prevention Plan. The Contractor shall be considered
the "permittee". The Contractor shall be responsible for payment of all
fees. All submissions to the state shall be by certified mail. Copies of
the return receipt for each submission shall be included with the submittal
to the Contracting Officer's Representative.

3.2 IMPLEMENTATION

3.2.1 Notice of Intent

The Contractor shall complete and submit a Notice of Intent (NOI) in accordance with NPDES General Permit No. 2. A copy of the submitted Notice of Intent along with the demonstration that the public notice was published shall be furnished to the Contracting Officer's Representative at least 2 days prior to the commencement of construction activities. The Contractor shall be responsible for all public notifications required in accordance with NPDES General Permit No. 2.

3.2.2 Storm Water Pollution Prevention Plan

The Contractor shall prepare and implement a Storm Water Pollution Prevention Plan in accordance with NPDES General Permit No. 2 and the Iowa DNR "Developing Pollution Prevention Plans and Best Management Practices" Summary Guidance. Any temporary or permanent erosion and sedimentation control measures shown on the drawings shall be incorporated into the Contractor's Storm Water Pollution Prevention Plan. The Contractor shall submit the Storm Water Pollution Prevention Plan for review and acceptance by the Contracting Officer's Representative at least 14 calendar days prior to the commencement of construction activities. Land disturbance activities shall not commence until the Contractor's Storm Water Pollution Prevention Plan has been accepted by the Government. The Government reserves the right to require the Contractor to make changes in the Storm Water Pollution Prevention Plan or to the Contractor's operations if the Contracting Officer's Representative determines that environmental protection requirements are not being met.

3.2.3 Inspections and Reporting

The Contractor shall be responsible for all inspections and reporting required under NPDES General Permit No. 2. Copies of all reports shall be furnished to the Contracting Officer's Representative.

3.2.4 Retention of Records

The Contractor shall retain copies of the storm water pollution prevention plan and all reports in accordance with NPDES General Permit No. 2.

3.2.5 Notice of Discontinuation

The Contractor shall prepare and submit a Notice of Discontinuation in accordance with NPDES General Permit No. 2. A copy of the submitted Notice of Discontinuation shall be furnished to the Contracting Officer's Representative.

-- End of Section --

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TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

IOWA DEPARTMENT OF NATURAL RESOURCES

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

GENERAL PERMIT NO. 2

**EFFECTIVE DATE
OCTOBER 1, 1997 THROUGH OCTOBER 1, 2002**

FOR

**STORM WATER DISCHARGE ASSOCIATED WITH
INDUSTRIAL ACTIVITY FOR CONSTRUCTION
ACTIVITIES**

NPDES GENERAL PERMIT NO. 2
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PART I. COVERAGE UNDER THIS PERMIT

A. PERMIT AREA. This permit covers all areas of the State of Iowa.

B. ELIGIBILITY.

1. A. Except for discharges identified under Parts I.B.2. and I.B.3., this permit may authorize the discharge of storm water associated with industrial activity from construction sites, (those sites or common plans of development or sale that will result in the disturbance of five or more acres total land area), (hereafter referred to as storm water discharge associated with industrial activity for construction activities) occurring after the effective date of this permit (including discharges occurring after the effective date of this permit where the construction activity was initiated before the effective date of this permit), including storm water discharge associated with industrial activity from areas that are dedicated to producing earthen materials, such as soils, sand and gravel, for use at a single construction site.

B. This permit may authorize storm water discharge from a construction site that is mixed with storm water discharge associated with industrial activity from sources other than construction activities provided that the storm water discharge from the industrial (non-construction) source is in compliance with the terms of a NPDES general permit, other than this general permit, or individual permit authorizing such discharge. In addition, the storm water other than from construction, shall be in compliance with Part IV.D.6. of this permit.

2. LIMITATIONS ON COVERAGE. The following storm water discharges associated with industrial activity for construction activities are not authorized by this permit:

A. storm water discharges that are mixed with sources of non-storm water other than

discharges identified in Part III.A.2. of this permit;

B. storm water discharges associated with industrial activity for construction activities which are covered by an existing individual NPDES permit or which are issued a permit in accordance with Part I.C. of this permit.

Storm water discharges authorized by an existing individual NPDES permit will be eligible to apply for coverage under this general permit as the existing individual permit expires; and

C. storm water discharges associated with industrial activity for construction activities that the Iowa Department of Natural Resources has determined to be or may reasonably be expected to be contributing to a violation of a water quality standard.

3. EXCLUSIONS. The following "storm water discharges associated with industrial activity" from construction activities do not require a NPDES permit:

discharges from agricultural and silvicultural activities including storm water runoff from orchards, cultivated crops, pastures, range lands, and forest lands, but not discharges from concentrated animal feeding operations as defined in 40 CFR 122.23, concentrated aquatic production facilities as defined in 40 CFR 122.24, discharges to aquaculture projects as defined in 40 CFR 122.25, and discharges from silvicultural point sources as defined in 40 CFR 122.27.

C. REQUIRING AN INDIVIDUAL PERMIT.

1. The Department may require any person authorized by this permit to apply for and obtain an individual NPDES permit. The Department may require any owner or operator authorized to discharge under this permit to apply for an individual NPDES permit only if the owner or operator has been notified in writing that a permit application is required. This notice shall include a brief

IOWA DEPARTMENT OF NATURAL RESOURCES NPDES GENERAL PERMIT NO. 2
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statement of the reasons for this decision, an application form, a statement setting a deadline for the owner or operator to file the application, and a statement that on the effective date of the individual NPDES permit, coverage under this general permit shall automatically terminate. If an owner or operator fails to submit an individual NPDES permit application required by the Department under this paragraph, coverage of this general permit automatically is terminated at the end of the day specified for submittal of the individual NPDES application.

2. Any person authorized to discharge under this permit may apply for an individual NPDES permit. In such cases, the discharger shall submit the following in accordance with the requirements of subrule (567)--64.3(4) in the Iowa Administrative Code:

A. an individual application, using DNR Form 1 and EPA Form 2F, and,

B. all applicable fees identified in rule (567)--64.16 in the Iowa Administrative Code.

3. When an individual NPDES permit is issued to a discharger covered under this general permit, the applicability of this general permit to the individual NPDES permittee is automatically terminated on the effective date of the individual NPDES permit.

When an individual NPDES permit is denied to a discharger otherwise subject to this permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the date of such denial, unless otherwise specified by the Department.

D. AUTHORIZATION.

1. A discharger must submit a Notice of Intent (NOI) in accordance with the requirements of Part II of this permit in order for storm water discharge associated with industrial activity for construction activities pursuant to Part I.B. of this permit to be authorized to discharge under this general permit.

2. Unless notified by the Department to the contrary, dischargers who submit a Notice of Intent (NOI) in accordance with the requirements of Part II of this permit are authorized to discharge storm water associated with industrial activity for construction activities under the terms and conditions of this permit on the date the completed Notice of Intent was received by the Department or the date construction is scheduled to begin as provided on Form 542-1415 (Notice of Intent) whichever is later. Upon review of the Notice of Intent, the Department may deny coverage under this permit and require submittal of an application for an individual NPDES permit.

PART II. NOTICE OF INTENT (NOI) REQUIREMENTS

A. DEADLINES FOR FILING A NOTICE OF INTENT.

1. Except as provided in Parts II.A.2. and II.A.3. of this permit, Individuals who intend to obtain coverage for an existing storm water discharge associated with industrial activity for construction activities which expired on or after October 1, 1997, shall submit a complete Notice of Intent (NOI) in accordance with the requirements of Part II.C. on or before April 1, 1998.

2. For storm water discharge associated with industrial activity for construction activities where construction begins after October 1, 1992, the NOI requirements specified in Part II.C. of this permit shall be submitted to the Department at least 24 hours prior to the start of construction.

3. **DEFERMENTS.** The application deadline and requirements for storm water discharge associated with industrial activity for construction activities in which the discharge is owned or operated by a municipality serving a population less than 100,000 have been waived until a later date and as requirements are established by the U.S.

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Environmental Protection Agency in 40 CFR 122.26.

- B. **FAILURE TO NOTIFY.** Dischargers who fail to notify the Department of their intent to be covered, and discharge pollutants to water of the United States within Iowa, without an NPDES permit, are in violation of the Clean Water Act and the Code of Iowa.

- C. **CONTENTS OF THE NOTICE OF INTENT.** A complete Notice of Intent shall include the items described in Parts II.C.1., II.C.2., and II.C.3. of this permit.

1. A completed Notice of Intent (NOI) form, DNR Form 542-1415, signed in accordance with Part VI.G. of this permit. The information on the form shall include the following:

A. Name, mailing address, and location of the construction site for which this notification is submitted. The location should be provided as the 1/4 section, township, and range, or the latitude and longitude, and the county in which the storm water discharge is located.

B. The owner's name, address, telephone number, and status (federal, state, private, public or other entity).

C. The name, address and telephone number of any operator (contractor) that has been identified as having a role in the storm water pollution prevention plan for the site required under Part IV.D.7. of this permit. Contractors (operators) identified after the submittal of the completed Notice of Intent shall be identified in the pollution prevention plan.

D. The type of discharge (new or existing as related to October 1, 1992); whether or not the discharge is to a municipal separate storm sewer system; the date the discharge is to commence; the permit status of the discharge; and, the name of the receiving waters.

E. An indication if any existing quantitative data is available describing the concentration of pollutants in storm water discharges and a summary of available existing data. (Existing data should not be included as part of the NOI, it should be retained as part of the Pollution Prevention Plan).

F. A brief description of the project; an estimated timetable for major activities; and, an estimate of the number of acres of the site on which soil will be disturbed.

G. A certification that compliance with G.(1) through G.(4). are met:

G.(1). the pollution prevention plan has been developed before this Notice of Intent is submitted to the Department;

G.(2). the pollution prevention plan will be implemented on October 1, 1997 for any existing storm water discharge associated with industrial activity for construction activities. For a storm water discharge associated with industrial activity for construction activities that commence after October 1, 1997, the pollution prevention plan shall be implemented with the start of construction activities;

G.(3). this Notice of Intent will be included and incorporated into the pollution prevention plan and will be updated as required; and,

G.(4). the storm water pollution prevention plan provides compliance with section 467A.64 of the Code of Iowa and local sediment and erosion plans and are consistent with the requirements of Part IV of this general permit.

2. **APPLICABLE FEES.** The applicable fees specified in Iowa Administrative Code 567 -- 64.16(455B).

3. **PUBLIC NOTIFICATION.** A demonstration that the public notice specified in Iowa Administrative Code 567--64.6(1)"c"(2) was published at least one day, in at least two

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newspapers with the largest circulation in the area in which the facility is located or the activity will occur.

- D. **WHERE TO SUBMIT.** Facilities which discharge storm water associated with industrial activity for construction activities must submit items described in Parts II.C.1., 2., and 3. of this permit to the Department at the following address:

Storm Water Coordinator
Iowa Department of Natural Resources
Henry A. Wallace Building
502 E. 9th St.
Des Moines, IA 50319-0034

- E. **RENOTIFICATION.** Within 180 days after this general permit expires, the permittee is required to resubmit a completed Notice of Intent with the Department for coverage under the new general permit. If a general permit has not been reissued within 180 days after expiration, the storm water discharger must apply for an individual NPDES permit according to the procedures identified in Iowa Administrative Code 567--64.3(4).

- F. **TRANSFER OF COVERAGE UNDER THIS PERMIT.** For storm water discharge associated with industrial activity for construction activities where the ownership changes, the Department must be notified of the title transfer within 30 days. If a storm water discharge associated with industrial activity for construction activities is covered by this general permit, the new owner(s) shall be subject to all terms and conditions of this general permit. A copy of the notice of transfer that was sent to the Department shall be included in the pollution prevention plan.

- G. **NOTICE OF DISCONTINUATION.**

1. Within 30 days after final stabilization at a construction site (as defined in Part VIII of this permit), the operator or owner of the facility shall submit a Notice of Discontinuation to the Department.

2. The Notice of Discontinuation shall include the following information:

- A. the name of the owner/operator to which the permit was issued;
- B. the general permit number and permit authorization number;
- C. the date the construction site reached final stabilization; and,
- D. the following certification signed in accordance with Part VI.G. of this permit:

"I certify under penalty of law that disturbed soils at the identified facility have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time. I understand that by submitting this Notice of Discontinuation, that I am no longer authorized to discharge storm water associated with industrial activity for construction activities by Iowa Department of Natural Resources General NPDES Permit No. 2. and that discharging pollutants from storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit."

**PART III. SPECIAL CONDITIONS,
MANAGEMENT PRACTICES, AND OTHER
NON-NUMERIC LIMITATIONS**

A. **PROHIBITION ON NON-STORM WATER DISCHARGES.**

1. All discharges authorized by this permit shall be composed entirely of storm water except for non-storm discharges listed in Part III.A.2.
2. Discharges from fire fighting activities; fire hydrant flushings; waters used to wash vehicles in accordance with Part IV.D.2.C.(2).; potable water sources including waterline flushings; irrigation drainage; routine external building washdown which does not use detergents; pavement washwaters

where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; springs; and foundation or footing drains where flows are not contaminated with process materials such as solvents; may be authorized by this permit provided the non-storm water component of the discharge is in compliance with Part IV.D.5. of this permit.

- B. RELEASES IN EXCESS OF REPORTABLE QUANTITIES.** Any owner or operator identified in the pollution prevention plan is subject to the spill notification requirements as specified in 455B.386 of the Iowa Code. Iowa law requires that as soon as possible but not less than six hours after the onset of a "hazardous condition" the Department and local sheriff's office or the office of the sheriff of the affected county be notified.

The storm water pollution prevention plan described in Part IV of this permit must be modified within 14 calendar days of knowledge of the release to provide a description of the release and the circumstances leading to the release and to identify and provide for the implementation of steps to prevent the reoccurrence of such releases and to respond to such releases.

PART IV. STORM WATER POLLUTION PREVENTION PLANS

A storm water pollution prevention plan shall be developed for each construction site covered by this permit. Storm water pollution prevention plans shall be prepared in accordance with good engineering practices. The plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of the storm water discharge from the construction activities. In addition, the plan shall describe and ensure the implementation of practices which will be used to reduce the pollutants in storm water discharge associated with industrial activity for construction activities at the construction site and to assure compliance with the terms and conditions of this permit. Facilities must implement the provisions

of the storm water pollution prevention plan required under this part as a condition of this permit.

A. DEADLINES FOR POLLUTION PREVENTION PLAN PREPARATION AND COMPLIANCE.

1. **POLLUTION PREVENTION PLAN PREPARATION DEADLINE.** The pollution prevention plan shall be completed prior to the submittal of an NOI to the Department to be covered under this permit and shall be updated as appropriate.
2. **POLLUTION PREVENTION PLAN COMPLIANCE DEADLINE.** The pollution prevention plan shall provide for compliance with the terms and schedule of the plan with the initiation of construction activities.

B. SIGNATURE AND PLAN REVIEW.

1. The plan shall be signed in accordance with Part VI.G., and be retained at the construction site from the date construction activities begin to the date of final stabilization.
2. The permittee shall make plans available to the Department upon request, or in the case of a storm water discharge associated with industrial activity for construction activities which discharge through a large or medium municipal separate storm sewer system with an NPDES permit, to the municipal operator of the system.
3. The Department may notify the permittee at any time that the plan does not meet one or more of the minimum requirements of this Part. After such notification from the Department, the permittee shall make changes to the plan and shall submit to the Department a written certification that the requested changes have been made. Unless otherwise provided by the Department, the permittee shall have 7 days after such notification to make the necessary changes.
4. All storm water pollution prevention plans received by the Department from the permittee are considered reports that shall be available to the public under Section 308(b) of

the CWA and Chapter 22 of the Code of Iowa. However, the permittee may claim any portion of a storm water pollution plan as confidential in accordance with Chapter 22 of the Code of Iowa and Iowa Administrative Code (561)--2.5.

- C. **KEEPING PLANS CURRENT.** The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not been addressed in the plan or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified in Part IV.D.2. of this permit, or in otherwise achieving the general objectives of controlling pollutants in storm water discharge associated with industrial activity for construction activities. In addition, the pollution prevention plan shall be updated to: include contractors identified after the submittal of the Notice of Intent as CO-permittees, described in Part IV.D.7. of this permit; identify any change in ownership or transference of the permit and permit responsibilities; or, if required, by the occurrence of a hazardous condition (as defined in Part VIII of this permit). Amendments to the plan may be reviewed by the Department of Natural Resources in the same manner as Part IV.B.2.

- D. **CONTENTS OF THE POLLUTION PREVENTION PLAN.** The storm water pollution prevention plan shall include the following items:

1. **SITE DESCRIPTION.** Each plan shall, provide a description of the following:

A. a description of the nature of the construction activity;

B. estimates of the total area of the site and the area of the site that is expected to be disturbed by excavation, grading, or other activities;

C. an estimate of the runoff coefficient of the site after construction activities are

completed and existing data describing the soil or the quality of any discharge from the site;

D. a site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, the location of major structural and nonstructural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands), and locations where storm water is discharged to a surface water; and

E. the name of the receiving water(s) and the ultimate receiving water(s).

2. **CONTROLS.** Each plan shall include a description of appropriate controls that will be implemented at the construction site. The plan will clearly describe the intended sequence of major activities and for each activity, the appropriate control measures and the timing during the construction process that the measures will be implemented. (For example, perimeter controls for one portion of the site will be installed after the clearing and grubbing necessary for installation of the measure, but before the clearing and grubbing for the remaining portions of the site. Perimeter controls will be actively maintained until final stabilization of those portions of the site upward of the perimeter control. Temporary perimeter controls will be removed after final stabilization). The description of controls shall address the following minimum components:

A. **EROSION AND SEDIMENT CONTROLS.**

A.(1). **STABILIZATION PRACTICES.** A description of temporary and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans should ensure that existing vegetation is preserved where attainable and that disturbed areas are stabilized. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod

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stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as precluded by snow cover, stabilization measures shall be initiated on all disturbed areas as soon as practical but in no case where construction activity will not occur for a period of 21 or more calendar days later than the 14th day after no construction activity has occurred on such area. Where the initiation of stabilization measures by the 14th day after no construction activity occurs is precluded by snow cover, then stabilization measures shall be initiated as soon as practicable thereafter.

A.(2). STRUCTURAL PRACTICES. A description of structural practices to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff from exposed areas of the site. Such practices may include silt fences, earth dikes, brush barriers, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. Structural practices should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the CWA.

A.(2).(a). For common drainage locations that serve an area with more than 10 disturbed acres at one time, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. The 3,600 cubic feet of storage area per acre drained does not apply to flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around the sediment basin. For drainage locations which serve more than 10 disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control is not attainable, sediment traps, silt fences, or

equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area.

A.(2).(b). For drainage locations serving 10 or less acres, sediment traps, silt fences or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area or a sediment basin providing storage for 3,600 cubic feet of storage per acre drained.

B. STORM WATER MANAGEMENT. A description of measures that will be installed during construction to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the CWA. This permit only addresses the installation of storm water management measures, and not the ultimate operation and maintenance of such structures after the construction activities have been completed and the site has undergone final stabilization. Permittees are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site, and are not responsible for maintenance after storm water discharges associated with industrial activity have been eliminated from the site.

B.(1). Such practices may include: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; and infiltration of runoff onsite; and sequential systems (which combine several practices). A goal of 80 percent removal of total suspended solids from those flows which exceed predevelopment levels should be used in designing and installing storm water management controls (where practicable). Where this goal is not met, the permittee shall provide justification for rejecting each practice based on site conditions.

B.(2). Velocity dissipation devices shall be placed at discharge locations and along the

length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. maintenance of hydrologic conditions, present prior to the initiation of construction activities)..

C. OTHER CONTROLS.

C.(1). **WASTE DISPOSAL.** All wastes composed of building materials must be removed from the site for disposal in permitted disposal facilities. No building material wastes or unused building materials shall be buried, dumped, or discharged at the site.

C.(2). Off-site vehicle tracking of sediments shall be minimized.

C.(3). The plan shall ensure and demonstrate compliance with applicable State or local waste disposal, sanitary sewer or septic system regulations.

D. APPROVED STATE OR LOCAL PLANS.

Facilities which discharge storm water associated with industrial activity for construction activities must include in their storm water pollution prevention plan procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by State or local officials. Applicable requirements specified in sediment and erosion plans, site permits or storm water management plans approved by State or local officials that are applicable to protecting surface water resources are, upon submittal of an NOI to be authorized to discharge under this permit, incorporated by reference and are enforceable under this permit even if they are not specifically included in a storm water pollution prevention plan required under this permit.

Operators of facilities seeking alternative permit requirements shall submit an individual permit application in accordance

with Part I.C.2. of this permit along with a description of why requirements in approved State or local plans should not be applicable as a condition of an NPDES permit.

3. **MAINTENANCE.** A description of procedures to maintain in good and effective operating conditions vegetation, erosion and sediment control measures and other protective measures identified in the site plan.

4. **INSPECTIONS.** Qualified personnel (provided by the discharger) shall inspect disturbed areas of the construction site that have not been finally stabilized at least once every seven calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater.

A. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

B. Based on the results of the inspection, the description of potential pollutant sources identified in the plan in accordance with paragraph IV.D.1. of this permit and pollution prevention measures identified in the plan in accordance with paragraph IV.D.2. of this permit shall be revised as appropriate as soon as practicable after such inspection. Such modifications shall provide for timely implementation of any changes to the plan within 7 calendar days following the inspection.

C. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water

pollution prevention plan, and actions taken in accordance with paragraph IV.D.4.B. of the permit shall be made and retained as part of the storm water pollution prevention plan for at least three years or until project termination. The report shall be signed in accordance with Part VI.G. of this permit.

5. **NON-STORM WATER DISCHARGES.** Except for flows from fire fighting activities, sources of non-storm water listed in Part III.A.2. of this permit that are combined with storm water discharges associated with industrial activity from construction activities must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

6. **ADDITIONAL REQUIREMENTS FOR STORM WATER DISCHARGE FROM INDUSTRIAL ACTIVITIES OTHER THAN CONSTRUCTION, INCLUDING DEDICATED ASPHALT PLANTS, AND DEDICATED CEMENT PLANTS.** This permit may only authorize a storm water discharge associated with industrial activity from a construction site that is mixed with a storm water discharge from an industrial source other than construction, where:

A. the industrial source other than construction is located on the same site as the construction activity;

B. storm water discharges associated with industrial activity from the areas of the site where construction activities are occurring are in compliance with the terms of this permit; and,

C. storm water discharges associated with industrial activity from the areas of the site where industrial activity other than construction are occurring (including storm water discharges from dedicated asphalt plants and dedicated cement plants) are in compliance with the terms and conditions, including applicable NOI or application requirements, of a different NPDES general permit or individual permit authorizing such discharges.

7. **CONTRACTORS.**

A. The storm water pollution prevention plan must clearly identify for each measure in the plan, the contractor(s) and/or subcontractor(s) that will implement the measure. All contractors and subcontractors identified in the plan must sign a copy of the certification statement in Part IV.D.7.B. of this permit in accordance with Part VI.G. of this permit. Upon signing the certification, the contractor or sub-contractor is a co-permittee with the owner and other co-permittee contractors. All certifications must be included in the storm water pollution prevention plan.

B. **CERTIFICATION STATEMENT.** All contractors and subcontractors identified in a storm water pollution prevention plan in accordance with Part IV.D.7.A. of this permit shall sign a copy of the following certification statement before conducting any professional service at the site identified in the storm water pollution prevention plan:

"I certify under penalty of law that I understand the terms and conditions of the general, National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site as part of this certification. Further, by my signature, I understand that I am becoming a co-permittee, along with the owner(s) and other contractors and subcontractors signing such certifications, to the Iowa Department of Natural Resources NPDES General Permit No. 2 for "Storm Water Discharge Associated with Industrial Activity for Construction Activities" at the identified site. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act and the Code of Iowa, to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under this NPDES permit and the terms of this NPDES permit."

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The certification must include the name and title of the person providing the signature; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification is made.

PART V. RETENTION OF RECORDS

- A. The permittee shall retain copies of storm water pollution prevention plans and all reports required by this permit, and records of all data used to complete the Notice of Intent to be covered by this permit, for a period of at least three years from the date that the site is finally stabilized.
- B. The permittee shall retain a copy of the storm water pollution prevention plan required by this permit at the construction site from the date of project initiation to the date of final stabilization.
- C. ADDRESSES. All written correspondence to the Department should be sent to the following address:

Storm Water Coordinator
Iowa Department of Natural Resources
Henry A. Wallace Building
502 E. 9th St.
Des Moines, IA 50319-0034

PART VI. STANDARD PERMIT CONDITIONS

A. DUTY TO COMPLY.

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Code of Iowa and the Clean Water Act and is grounds for enforcement action; for termination of coverage under this general permit; or, for denial of a request for coverage under a reissued general permit.
2. TOXIC POLLUTANTS. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean

Water Act (CWA) for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

- B. CONTINUATION OF THE EXPIRED GENERAL PERMIT. This permit expires on October 1, 2002. An expired general permit continues in force for 180 days after the expiration date. Only those facilities authorized to discharge under the expiring general permit are covered by the 180-day continuation of the expired general permit.
- C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- D. DUTY TO MITIGATE. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- E. DUTY TO PROVIDE INFORMATION. The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine compliance with this permit. The permittee shall also furnish to the Department upon request copies of records required to be kept by this permit.
- F. OTHER INFORMATION. When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report to the Department, he or she shall promptly submit such facts or information.
- G. SIGNATORY REQUIREMENTS. All Notices of Intent, storm water pollution prevention plans, reports, certifications or information either submitted to the Department or the operator of a large or medium municipal separate storm sewer system, or that this permit requires be

maintained by the permittee, shall be signed in accordance with rule 567--64.3(8) of the Iowa Administrative Code as follows:

64.3(8) *Identity of signatories of operation permit applications.* The person who signs the application for an operation permit shall be:

a. *Corporations.* In the case of corporations, a principal executive officer of at least the level of vice-president.

b. *Partnerships.* In the case of a partnership, a general partner.

c. *Sole proprietorships.* In the case of a sole proprietorship, the proprietor.

d. *Public facilities.* In the case of a municipal, state, or other public facility, by either the principal executive officer, or the ranking elected official.

e. *Storm water discharge associated with industrial activity from construction activity.* In the case of a storm water discharge associated with industrial activity from construction as identified in 40 CFR 122.26(b)(14)(x), either the owner of the site or the general contractor.

The person who signs NPDES reports shall be the same, except that in the case of a corporation or a public body, monitoring reports required under the terms of the permit may be submitted by the person who is responsible for the overall operation of the facility from which the discharge originated.

H. **CERTIFICATION.** Any person signing documents under paragraph VI.G. shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure

that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

I. **OIL AND HAZARDOUS SUBSTANCE LIABILITY.** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the Clean Water Act.

J. **PROPERTY RIGHTS.** The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

K. **SEVERABILITY.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

L. **TRANSFERS.** This permit is not transferable to any person except after notice to the Department. The Department may require the discharger to apply for and obtain an individual NPDES permit as stated in Part I.C.

M. **PROPER OPERATION AND MAINTENANCE.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and

maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of this permit.

- N. **INSPECTION AND ENTRY.** The permittee shall allow the Department or an authorized representative of EPA, the State, or, in the case of a facility which discharges through a municipal separate storm sewer, an authorized representative of the municipal operator or the separate storm sewer receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and,
3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

- O. **PERMIT ACTIONS.** Coverage under this permit may be terminated for cause. The filing of a request by the permittee for a permit discontinuance, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

- P. **ENVIRONMENTAL LAWS.** No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

PART VII. REOPENER CLAUSE

If there is evidence indicating potential or realized impacts or water quality due to any storm water discharge associated with industrial activity for

construction activities covered by this permit, the owner or operator of such discharge may be required to obtain individual permit in accordance with Part I.C of this permit.

PART VIII. DEFINITIONS

"Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"CWA" or "Clean Water Act" means the Federal Water Pollution Control Act.

"Dedicated portable asphalt plant" means a portable asphalt plant that is located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to.

"Dedicated portable concrete plant" means a portable concrete plant that is located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

"Dedicated sand or gravel operation" means an operation that produces sand and/or gravel for a single construction project.

"Department" means the Iowa Department of Natural Resources.

"Final Stabilization" means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% for the area has been established or equivalent stabilization measures have been employed.

"Hazardous condition" means any situation involving the actual, imminent, or probable spillage, leakage, or release of a hazardous substance on to the land, into a water of the state, or into the atmosphere,

which creates an immediate or potential danger to the public health or safety or to the environment. 455B.381(2) 1991, Code of Iowa

"Hazardous substance" means any substance or mixture of substances that presents a danger to the public health or safety and includes, but is not limited to, a substance that is toxic, corrosive, or flammable, or that is an irritant or that, in confinement, generates pressure through decomposition, heat, or other means. The following are examples of substances which, in sufficient quantity may be hazardous: acids; alkalis; explosives; fertilizers; heavy metals such as chromium, arsenic, mercury, lead and cadmium; industrial chemicals; paint thinners; paints; pesticides; petroleum products; poisons, radioactive materials; sludges; and organic solvents. "Hazardous substances" may include any hazardous waste identified or listed by the administrator of the United State Environmental Protection Agency under the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976, or any toxic pollutant listed under section 307 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous substance designated under section 311 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous material designated by the secretary of transportation under the Hazardous Materials Transportation Act (49 CFR 172.101). 455B.381(1), 1991 Code of Iowa

"Large and Medium Municipal Separate Storm Sewer System" means all municipal separate storm sewers that are either:

(i.) located in an incorporated place with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census; or

(ii.) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or

(iii.) owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the large or medium municipal separate storm sewer system.

"Municipality" means a city, town, borough, county, parish, district, association, or other public body created by or under State law.

"NOI" means Notice of Intent to be covered by this permit (see Part II of this permit.)

"Runoff coefficient" means the fraction of total rainfall that will appear at the conveyance as runoff.

"Storm Water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

"Storm water discharge associated with industrial activity" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under 40 CFR part 122. For the categories of industries identified in paragraphs (i) through (x) of this definition, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at 40 CFR part 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water.

For the categories of industries identified in paragraph (xi) of this definition, the term includes only storm water discharges from all the areas (except access roads and rail lines) that are listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. For the purposes of this paragraph,

material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are Federally, State, or municipally owned or operated that meet the description of the facilities listed in these paragraphs (i)-(xi) of the definition) include those facilities designated under 40 CFR 122.26(a)(1)(v). The following categories of facilities are considered to be engaging in "industrial activity" for purposes of this definition;

(i) Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR Subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi) of this definition);

(ii) Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311, 32 (except 323), 33, 3441, 373;

(iii) Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include

sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim);

(iv) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA;

(v) Landfills, land application sites, and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under Subtitle D of RCRA;

(vi) facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093;

(vii) Steam electric power generating facilities, including coal handling sites;

(viii) Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-4225), 43, 44, 45 and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs (i)-(vii) or (ix)-(xi) of this definition are associated with industrial activity;

(ix) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is

IOWA DEPARTMENT OF NATURAL RESOURCES NPDES GENERAL PERMIT NO. 2
STORM WATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY FOR CONSTRUCTION ACTIVITIES
EFFECTIVE DATE - OCTOBER 1, 1997 TO OCTOBER 1, 2002

beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with 40 CFR 503;

(x) Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than five acres of total land area which are not part of a larger common plan of development or sale;

(xi) Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-4225, (and which are not otherwise included within categories (ii)-(x));

"Storm water discharge associated with industrial activity for construction activities" means activities that fall under subparagraph (x) in the definition of storm water discharge associated with industrial activity.

**IOWA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

Cashier's Use Only
17-1709 -

NOTICE OF INTENT FOR NPDES COVERAGE UNDER GENERAL PERMIT

No. 1 FOR "STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY"

or

**No. 2 FOR "STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY
FOR CONSTRUCTION ACTIVITIES"**

or

**No. 3 FOR "STORM WATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY
FROM ASPHALT PLANTS, CONCRETE BATCH PLANTS, ROCK CRUSHING PLANTS, AND
CONSTRUCTION SAND AND GRAVEL FACILITIES."**

PERMIT INFORMATION

Has this storm water discharge been previously permitted (Check One) ☐ Yes ☐ No.

If yes, please list authorization number or permit number _____

What General Permit are you applying for coverage under ?

General Permit No. 1 ☐

General Permit No. 2 ☐

General Permit No. 3 ☐

NPDES PERMIT FEE OPTIONS

For coverage under the NPDES General Permit the following fees apply:

☐ Annual Permit Fee \$150 (per year)

or

☐ 5-year Permit Fee \$600

☐ 4-year Permit Fee \$450

☐ 3-year Permit Fee \$300

Coverage by the 5-year, 4-year, and 3-year permit fees expires no later than the expiration date of the general permit (October 1, 2002).

Maximum coverage is five years, four years, and three years, respectively.

FACILITY OR PROJECT INFORMATION

Enter the name and full address/location (not mailing address) of the facility or project for which permit coverage is requested.

| | | | |
|-------|---------|-----------------------------|-----------|
| NAME: | | ADDRESS / LOCATION OF SITE: | |
| CITY: | COUNTY: | STATE: | ZIP CODE: |

General Permit No. 3 only, second location (attach additional location information on separate pages as needed).

| | | | |
|-------|---------|-----------------------------|-----------|
| NAME: | | ADDRESS / LOCATION OF SITE: | |
| CITY: | COUNTY: | STATE: | ZIP CODE: |

OPERATOR / CONTACT INFORMATION. Give legal name of person, firm, or public organization which operates the facility described in this application. Include name, mailing address and telephone number of a contract person if different from operator or owner. (Attach additional information on separate pages as needed). General Permit No. 2 applicants (Construction Activities only) list contractors and subcontractor.

| | | | |
|---|--------|-----------|----------------------|
| NAME: | | ADDRESS: | |
| CITY: | STATE: | ZIP CODE: | TELEPHONE () |
| Check the appropriate box to indicate the legal status of the operator of the facility. | | | |
| <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Other (specify) _____ | | | |

SIC CODE* (General Permit No. 1 & 3 Applicants Only)

* SIC code refers to Standard Industrial Classification code number used to classify establishments by type of economic activity.

FACILITY LOCATION OR LOCATION OF CONSTRUCTION SITE

Give the location by section/township/range or latitude/longitude (Attach additional information on separate pages as needed).

| 1/4 SECTION | SECTION | TOWNSHIP | RANGE | LATITUDE | | | LONGITUDE | | |
|----------------|---------|----------|-------|----------|---------|---------|-----------|---------|---------|
| | | | | DEGREES | MINUTES | SECONDS | DEGREES | MINUTES | SECONDS |
| | | | | | | | | | |
| | | | | | | | | | |

OWNER INFORMATION

(If other than operator) Enter the name and full address of the owner and/or contact for the facility.

| | | | |
|-------|--------|-----------|-------------------|
| NAME: | | ADDRESS: | |
| CITY: | STATE: | ZIP CODE: | TELEPHONE: () |

OUTFALL INFORMATION

| |
|---|
| Discharge Start Date _____ |
| Is any quantitative information available describing the concentration of pollutants in storm water discharges? <input type="checkbox"/> Yes <input type="checkbox"/> No. |
| NOTE: Do not attach any storm water pollutant information as part of this Notice of Intent. |
| Receiving Water(s): |

**GENERAL PERMIT NO. 2 (CONSTRUCTION ACTIVITIES ONLY) AND GENERAL PERMIT NO 3 APPLICANTS
COMPLETE THIS SECTION.**

| | |
|--|--------------------------|
| Description of Project: | |
| Estimated Timetable For Activities / Projects: | |
| Number of Acres of Disturbed Soil: _____ | Yes No |
| Compliance with the following conditions: | |
| 1. Will this Notice of Intent be included in the pollution prevention plan? | <input type="checkbox"/> |
| 2. Has the pollution prevention plan, required in General Permit No. 2, Part III.C., been developed prior to the submittal of this Notice of Intent to the department? | <input type="checkbox"/> |
| 3. Will the Storm Water Pollution Prevention Plan comply with approved State (Section 467A.64, Code of Iowa) or local sediment and erosion plans? | <input type="checkbox"/> |
| 4. Has two (2) public notices been published for at least one day in newspapers with the largest circulation in the area where the discharge is located. | <input type="checkbox"/> |

CERTIFICATION

| | |
|--|--------|
| I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified people properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, this information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. | |
| NAME (please print) | TITLE: |
| SIGNATURE: | DATE: |



IOWA DEPARTMENT OF NATURAL RESOURCES

UNDERSTANDING STORM WATER NPDES PERMITTING REQUIREMENTS

INDEX

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BACKGROUND ON STORM WATER REGULATIONS

Amendments made in 1987 to the Federal Clean Water Act required the U.S. Environmental Protection Agency (EPA) to develop regulations for storm water discharges from "industrial activities."

Storm water regulations were established by EPA for National Pollutant Discharge Elimination System (NPDES) permit application requirement for certain types of industrial facilities or certain types of industrial activities. EPA's storm water regulations were published in the Federal Register on November 16, 1990, March 21, 1991, November 5, 1991 and April 2, 1992. These regulations established NPDES permit application requirements for certain types of industrial facilities or certain types of industrial activities.

Since 1978, The Iowa Department of Natural Resources (IDNR) has been delegated by the EPA to administer the federal NPDES wastewater discharge permit program. In August 1992 the IDNR received authorization from

EPA to issue general permits for storm water discharges. IDNR continues issuing NPDES permits to all storm water discharges subject to the federal permit requirements.

QUALITY OF STORM WATER RUNOFF

The intent of the federal storm water regulation is to improve water quality by reducing or eliminating contaminants in storm water. Storm water is defined as precipitation runoff, surface runoff and drainage, street runoff, and snow melt runoff.

Storm water runoff from areas where industrial activities occur may contain toxics (for example, lead, zinc, etc.) and conventional pollutants such as oil and grease, fertilizers, sediment from construction sites, and other industrial site contaminants, when material management practices allow exposure to storm water. In addition, illicit connections to storm sewers may also exist and introduce contaminants through storm sewer systems. Eventually these contaminants have the potential to effect additional downstream receiving waters. Contaminants introduced in storm water runoff or into storm sewers may impact drinking water sources, waters protected for recreation, waters protected for aquatic life as well as other beneficial uses.

WHO MUST APPLY FOR A STORM WATER DISCHARGE PERMIT?

EPA has identified certain types of industrial facilities (generally based on SIC Code¹) and certain types of activities as "industrial activities" that are subject to the federal storm water permitting requirements. **Only those facilities or activities that meet the definition of**

¹ SIC Code - A standard Industrial Classification (SIC) is a four digit number for classifying establishments by type of economic activity. SIC Codes are reported on the top of your company's corporate income tax return (IRS form 1120)

"storm water discharge associated with industrial activity" are required to apply for a storm water discharge permit for their point source discharges by the established deadline. A point source is an discrete definable conveyance of storm water.

The storm water permit requirements are only applicable to those areas where "industrial activities" are occurring.

For example: A facility is located on a ten acre site: three acres are used for employee parking and office building, six acres are undeveloped and "industrial activities" only occur on one acre. The entire drainage for the area where "industrial activities" occur flows in a different direction from the drainage from the rest of the site.

A storm water discharge permit would need to cover any definable conveyance(s) from the one acre where the "industrial activities" occur. These conveyances may include erosion channels, curbs or other visible drainage ways.

EPA's definition of "storm water discharge associated with industrial activity" is contained in Appendix A of this handout. A summary of the types of industrial facilities and industrial activities which are subject to the regulations are provided in Table 1.

APPLICATION DEADLINES²

New storm water discharges:

for coverage under a general storm water discharge permit - a Notice of Intent must be submitted to the IDNR at least 24 hours prior to the start of operations as specified in 567-64.3(4)"b" of the Iowa Administrative Code.

or

For an individual NPDES permit - 180 days prior to the start of operation (industrial activities except construction), and 90 days prior to construction (for construction activities).

² Except for airports, power plants and uncontrolled sanitary landfills, the application deadline for storm water discharges owned or operated by a municipality serving a population of less than 100,000 has been deferred to a later, unspecified date.

OPTIONS AVAILABLE FOR MAKING AN APPLICATION

There are two options available to "storm water discharge associated with industrial activity" applying for an NPDES permit.

1. **Individual Permit Application** - All storm water dischargers are eligible to apply for an individual NPDES permit. Applicants must complete DNR or EPA form 1 and EPA Form 2F. Additional forms may be required if storm water is mixed with non-process waste water (DNR Form 2); process waste water for existing sources (DNR Form 3) or process waste water from new sources (DNR Form 4).

An individual NPDES permit is a NPDES permit that is only applicable to one discharger. The permit is issued for a specific discharge. Only one individual permit will be issued to a facility. Thus, if a discharger has an existing individual NPDES permit, that permit will be modified to include its storm water outfalls.

Permit fees have been established for individual permits as follows:

Annually Permit Fee- \$300.

or

Five Years Permit Fee - \$1,250.00

2. **Applying for Coverage under a General Permit** - A storm water discharger may apply to be covered under a general permit. General permits are NPDES permit which contain the terms and conditions of a permit. General permits however are not specific to any one discharger, instead the general permit identifies which dischargers may be eligible for coverage under the general permit.

The IDNR has adopted three general permits for storm water.

- **General Permit No.1** - For "Storm Water Discharge Associated With Industrial Activity" (Excludes Construction).
- **General Permit No. 2** - For "Storm Water Associated With Industrial Activity For Construction Activities" (Land Disturbing 5 Acres Or More).
- **General Permit No 3** - "Storm Water Discharge Associated With Industrial Activity From Asphalt Plants, Concrete Batch Plants, Rock Crushing Plants, And Construction Sand And Gravel Facilities"

General permits are applicable to discharges which are composed of storm water only. Iowa's storm water general permits do not cover mixtures of storm water with non-storm water where the non-storm water would require a NPDES permit from the IDNR (refer to the specific general permit for additional details).

Dischargers who apply for coverage under the general permit must complete and submit a Notice of Intent to the IDNR. An instruction sheet describing "*How To Complete A Notice Of Intent*" is available from the IDNR. The instruction sheet explains how to provide the following three elements of a complete "Notice of Intent".

- Form 1415,
- Proof of public notification, and
- Permit fees.

For coverage under the NPDES General Permit the following fees options apply:

Option 1. You may choose to submit an annual permit fee of \$150.00 each year. The department will then bill you \$150.00 each year for up to five years permit coverage.

or

Option 2. A permit fee of \$600.00 provides for five year coverage under the general permit until the permit expires on October 1, 2002.

or

Other permit fee options include **Three-year** permit for \$300.00 and a **four-year** permit for \$450.00.

Coverage provided by the 5-year, 4-year, and 3-year permit fees expires no later than the expiration date of the general permit (October 1, 2002). Maximum coverage is five years, four years, and three years, respectively.)

When a storm water discharger submits a complete Notice of Intent with the IDNR the discharger is agreeing to meet the terms and conditions of the general permit.

Iowa law requires that general permits be adopted as a rule. This requirement is more stringent than the routine NPDES permit issuance requirements. Because of Iowa's statutory requirement, these storm water general permits have been adopted as an administrative rule under 567 - Chapters 60 and 64 of the Iowa Administrative Code. The general

permit can be modified only through the rule making process.

CONTACTING THE IOWA DEPARTMENT OF NATURAL RESOURCES

If you need assistance contact the IDNR at (515)281-7017 or (515) 281-6782 and ask for "Storm water general permit assistance."

All correspondence should be sent to the following address:

Storm Water Coordinator
Iowa Department of Natural Resources
502 E. 9th Street
Des Moines, Iowa 50319-0034

Appendix A Definition of "Storm Water Discharge Associated with Industrial Activity" (40 CFR 122.26(b)(14))

The following is EPA's definition of "industrial activity". If you fall under the definition, you will be subject to the application requirements described in this handout.

"Storm water discharge associated with industrial activity" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under 40 CFR Part 122. For the categories of industries identified in paragraphs "1" through "10" of this definition, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water.

For the categories of industries identified in paragraph "11", the term includes only storm water discharges from all the areas (except access roads and rail lines) that are listed in the previous sentence where material handling

equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. For the purposes of this paragraph, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, state, or municipally owned or operated that meet the description of the facilities listed in this paragraph "1"-"11" include those facilities designated under 40 CFR 122.26(a)(1)(v). The following categories of facilities are considered to be engaging in "industrial activity" for purposes of this definition:

1. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR Subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category "11" of this definition);

2. Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311, 32 (except 323), 33, 3441, 373;

3. Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations meeting the

definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable state or federal reclamation requirements after December 17, 1990 and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, by-products or waste products located on the site of such operations; (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim);

4. Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA;

5. Landfills, land application sites, and open dumps that have received any industrial wastes (waste that is received from any of the facilities described under this definition) including those that are subject to regulation under Subtitle D of RCRA;

6. Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including, but limited to, those classified as Standard Industrial Classification 5015 and 5093;

7. Steam electric power generating facilities, including coal handling sites;

8. Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-4225), 43, 44, 45 and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance, (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs "1" to "7" or "9" to "11" of this definition are associated with industrial activity;

9. Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farmlands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with 40 CFR 503;

10. Construction activity including clearing, grading and excavation activities except: operations that result in the disturbances of less than five acres of total land area which are not part of a larger common plan of development or sale;

11. Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-4225, (and which are not otherwise included within categories "2" to "10");

TABLE 1
FACILITIES OR ACTIVITIES DEFINED AS "INDUSTRIAL ACTIVITIES" SUBJECT TO THE
STORM WATER DISCHARGE APPLICATION REQUIREMENTS.

1. Facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N except facilities with toxic pollutant effluent standards which are exempted under category (10) of this definition.

2. Facilities classified as:

SIC 24 Lumber and wood products except Furniture (except 2434)

SIC 26 Paper and Allied Products (except 265 and 267)

SIC 28 Chemicals and Allied Products (except 283 and 285)

SIC 29 Petroleum Refining and Related Industries

SIC 311 Leather Tanning and Finishing

SIC 32 Stone, Clay, Glass and Concrete Products (except 323)

SIC 33 Primary Metal Industries

SIC 3441 Fabricated Structural Metal Products

SIC 373 Ship and Boat Building and Repairing

3. Facilities classified as SIC 10 through 14 (mineral industry) including active or inactive mining operations and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come in contact with, any overburden, raw material, intermediate products, finished products, by products or waste products located on the site of such operations.

SIC 10 Metal Mining

SIC 12 Coal Mining

SIC 13 Oil and Gas Extraction

SIC 14 Mining and Quarrying of Nonmetallic Minerals, fuels

4. Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under subtitle C of RCRA.

5. Landfills, land application sites, and open dumps that receive or have received any industrial wastes (wastes from any of the facilities described under this definition including those that are subject to regulation under subtitle D of RCRA.

6. Facilities involved in the recycling of materials which are classified as:

SIC 5015 Motor Vehicle Parts, Used or SIC 5093 Scrap and Waste Materials

7. Steam electric power generating facilities, including coal handling sites,

8. Those portion of transportation facilities that are either involved with vehicle maintenance, equipment cleaning operations, or airport deicing operations, or which are otherwise identified as industrial activities in other sections of this definition.

SIC 40 Railroad Transportation

SIC 41 Local and Suburban Transit and

Interurban Highway Passenger Transportation

SIC 42 Motor Freight Transportation and Warehousing (except 4221-4225)

SIC 43 U.S. Postal Service

SIC 44 Water Transportation

SIC 45 Transportation by Air

SIC 5171 Petroleum Bulk Stations and Terminals

9. Treatment works treating domestic sewage or other sewage sludge with a design flow of 1.0 MGD or more, or required to have an approved treatment program under 40 CFR Part 403.

10. Construction activity including cleaning, grading and excavation activities except operations that result in the disturbance of less than five acres of total land area which are not part of a larger common plan or development or sale.

11. Facilities where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, byproducts or industrial machinery are exposed to storm water.

SIC 20 Food and Kindred Products

SIC 21 Tobacco Products

SIC 22 Textile Mill Products

SIC 23 Apparel and Other Finished Products Made From Fabrics and Similar Materials

SIC 2434 Wood Kitchen Cabinets

SIC 25 Furniture and Fixtures

SIC 265 Paperboard Containers and Boxes

SIC 267 Converted Paper Except Containers and Boxes

SIC 27 Printing, Publishing and Allied Industries

SIC 283 Drugs

SIC 285 Paint, Varnishes, Lacquers, Enamels, and Allied Products

SIC 30 Rubber and Miscellaneous Plastic Products

SIC 311 Leather and Leather Products (except 311)

SIC 323 Glass Products, Made from Purchased Glass

SIC 34 Fabricated Metal Products, Except Machinery and Transportation Equipment (except 3441)

SIC 35 Industrial and Commercial Machinery and Computer Equipment

SIC 36 Electronic and Other Electrical Equipment and Components, Except Computer Equipment

SIC 37 Transportation Equipment (except 373)

SIC 38 Measuring, Analyzing, and Controlling Instruments; Photographic, Medial and Optical Goods; Watches and Clocks

SIC 39 Miscellaneous Manufacturing Industries

SIC 4221 Farm Product Warehousing and Storage

SIC 4222 Refrigerated Warehousing and Storage

SIC 4225 General Warehousing and Storage

***"HOW TO FILE A COMPLETE
NOTICE OF INTENT"***

for

NPDES General Permit No.1
for "Storm Water Discharge
Associated With Industrial Activity"

or

NPDES General Permit No.2
for " Storm Water Discharge
Associated with Industrial Activity
for Construction Activities"

or

NPDES General Permit No.3
for "Storm Water Discharge Associated with
Industrial Activity for Asphalt Plants,
Concrete Batch Plants, Rock Crushing Plants
and Construction Sand and Gravel Facilities"

November 1997

IOWA DEPARTMENT OF NATURAL
RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
WASTEWATER PERMITS SECTION
502 E. 9TH STREET
DES MOINES, IOWA 50319-0034



These instructions are provided to dischargers who need to notify the IDNR that their storm water discharge will be covered under either Iowa's NPDES General Permit No.1, General Permit No.2, or General Permit No. 3. The instructions are the same for all general permits. When a discharger provides a complete Notice of Intent with the IDNR, its storm water discharges will be subject to the terms and conditions of the appropriate general permit unless notified by the IDNR.

To file a complete Notice of Intent you must provide the following three items:

1. A completed Form 1415 entitled *"Notice of Intent for NPDES Coverage Under General Permit"*,
2. Proof of Public notification: and,
3. Permit fee.

Each of these items are discussed in detail on the back side of this page

Mail your completed Notice of Intent to the following address:

Storm Water Coordinator
Department of Natural Resources
502 E. 9th Street
Des Moines, Iowa 50319-0034

**1. Notice of Intent for NPDES
Coverage Under General
Permit No.1, General Permit
No.2 or General Permit No.3.**

(Form 1415)

Form 1415 provides the Iowa Department of Natural Resources with a Notice of Intent that the discharge will be covered under the appropriate general permit (General Permit No.1, General Permit No.2, or General Permit No.3). By submitting a completed Form 1415 to the IDNR you are agreeing that the storm water discharge will meet the terms and conditions of the general permit.

You must complete the form and it must be signed by a qualified official.

Those qualified to sign are:

- a. *Corporations* - A principal executive officer of at least the level of vice-president.
- b. *Partnership* - A general partner.
- c. *Sole proprietorship* - the proprietor.

d. *Public facilities.* For a municipal, state, or other public facility, either the principal executive officer, or the ranking elected official.

e. In the case of a storm water discharge associated with industrial activity from construction as identified in 40 Code of Federal Regulations (CFR) 122.26(b)(14)(x), either the owner of the site or the general contractor.

2. Proof of Public Notification

Iowa law requires dischargers to make public notice for seeking coverage under a general permit. The public notice must be published at least one day at your own expense in two newspaper with the largest circulation in the area where the discharge is located.

The wording to use in the public notice is specified as a rule of the IDNR and is included as a separate page for your convenience. This wording contains the minimum information that must be

provided in the public notice. Dischargers may add more information to the notice if they choose.

To determine which newspapers have the largest circulation ask your local newspaper or call the Iowa Newspaper Association (INA) at (515) 244-2145 for circulation information. You can contact the individual newspapers directly or place your public notice order through the INA. The INA is located at 319 E. Fifth Street, Des Moines, Iowa 50309.

When you send your Notice of Intent to the IDNR, enclose a clipping of each public notice with the names of the newspaper and date published, or an affidavit from each newspaper to demonstrate your public notification requirement.

3. Fees

There is a permit fee for each general permit. The fee schedule is the same for General Permit No.1, No.2, or No.3.

The applicant has the option of paying an annual permit fee or a multi-year permit fee.

Option 1. You may choose to submit an annual permit fee of \$150 each year. A bill will be mailed to you each year. Failure to pay will void coverage under the general permit.

or

Option 2. Multi-year which provides for coverage under the general permit until the permit expires on October 1, 2002.

| | |
|-------------------|-------|
| 5-year Permit Fee | \$600 |
| 4-year Permit Fee | \$450 |
| 3-year Permit Fee | \$300 |

(Coverage provided by the 5-year, 4-year, and 3-year permit fees expires no later than the expiration date of the general permit. Maximum coverage is five years, four years, and three years, respectively.)

Enclose a check or money order make payable to the Iowa Department of Natural Resources for the sum of the permit fee.

If you need assistance contact the IDNR at (515) 281-7017 or (515) 281-6782 "storm water general permit assistance."

Instructions - To complete the public notice, fill in the blanks with the required information or select the appropriate response.

PUBLIC NOTICE OF STORM WATER DISCHARGE

The _____ plans to submit a Notice of Intent to the
(applicant name)

Iowa Department of Natural Resources to be covered under the NPDES General Permit

(select the appropriate general permit - No. 1 "Storm Water Discharge Associated with Industrial Activity", General Permit No. 2 "Storm Water Discharge Associated with Industrial Activity for Construction Activities, or General Permit No. 3 "Storm Water Discharge Associated With Industrial Activity From Asphalt Plants, Concrete Batch Plants, Rock Crushing Plants, And Construction Sand And Gravel Facilities")

The storm water discharge will be from _____
(description of industrial activity)

located in _____
(1/4 section, township, range, county)

Storm water will be discharged from _____ point source(s) and will be discharged to
(number)

the following streams: _____
(stream name(s))

Comments may be submitted to the Storm Water Discharge Coordinator, IOWA DEPARTMENT OF NATURAL RESOURCES, Environmental Protection Division, Henry A. Wallace Building, 502 E 9th Street, Des Moines, IA 50319-0034. The public may review the Notice of Intent from 8 a.m. to 4:30 p.m., Monday through Friday, at the above address after it has been received by the department.

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SECTION 02316

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11/97

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SECTION 02316

EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS
11/97

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|--|
| ASTM D 1556 | (1990; R 1996) Density and Unit Weight of Soil in Place by the Sand-Cone Method |
| ASTM D 1557 | (1998) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu. m.)) |
| ASTM D 2167 | (1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method |
| ASTM D 2487 | (1998) Classification of Soils for Engineering Purposes (Unified Soil Classification System) |
| ASTM D 2922 | (1996) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) |
| ASTM D 3017 | (1988; R1996el) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth) |

1.2 NOT USED

1.3 DEGREE OF COMPACTION

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-06 Test Reports

Field Density Tests; .
Testing of Backfill Materials; .

Copies of all laboratory and field test reports within 24 hours of the completion of the test.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Satisfactory Materials

Satisfactory materials shall comprise any materials classified by ASTM D 2487 as GW, GP, GM, GC, SW, SP, SM, [CL, and ML.

2.1.2 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials are unsatisfactory. Unsatisfactory materials also include man-made fills, trash, refuse, or backfills from previous construction. Unsatisfactory material also includes material classified as satisfactory which contains root and other organic matter, frozen material, contamination from hazardous, toxic, biological or radiological substances (unless the contamination lies in soil that was previously excavated at the same location; and stones larger than 76.2 millimeters . The Contracting Officer shall be notified of any contaminated materials as indicated in paragraph 3.1.1/5 "Stockpiles".

2.1.3 Cohesionless and Cohesive Materials

Cohesionless materials shall include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials shall include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM shall be identified as cohesionless only when the fines are nonplastic.

2.1.4 Not Used

2.1.5 Unyielding Material

Unyielding material shall consist of rock and gravelly soils with stones greater than 76.2 millimeters in any dimension or as defined by the pipe manufacturer, whichever is smaller.

2.1.6 Unstable Material

Unstable material shall consist of materials too wet to properly support the utility pipe, conduit, or appurtenant structure.

2.1.7 Select Granular Material

Select granular material shall consist of well-graded sand, gravel, crushed gravel, crushed stone or crushed slag composed of hard, tough and durable particles, and shall contain not more than 10 percent by weight of material passing a 0.075 millimeters mesh sieve and no less than 95 percent by weight passing the 25 millimeters sieve. The maximum allowable aggregate size shall be 25.4 millimeters or the maximum size recommended by the pipe manufacturer, whichever is smaller.

2.1.8 Initial Backfill Material

Initial backfill shall consist of select granular material or satisfactory materials free from rocks 12.5 millimeters or larger in any dimension or free from rocks of such size as recommended by the pipe manufacturer, whichever is smaller. When the pipe is coated or wrapped for corrosion protection, the initial backfill material shall be free of stones larger than 12.5 millimeters in any dimension or as recommended by the pipe manufacturer, whichever is smaller.

2.2 PLASTIC MARKING TAPE

Plastic marking tape shall be acid and alkali-resistant polyethylene film, 152 millimeters wide with minimum thickness of 0.102 millimeters. Tape shall have a minimum strength of 12.1 MPa lengthwise and 10.3 MPa crosswise. The tape shall be manufactured with integral wires, foil backing or other means to enable detection by a metal detector when the tape is buried up to 1 meter deep. The tape shall be of a type specifically manufactured for marking and locating underground utilities. The metallic core of the tape shall be encased in a protective jacket or provided with other means to protect it from corrosion. Tape color shall be Blue and shall bear a continuous printed inscription clearly identifying the water utility--"BURIED WATER LINE BELOW".

Where the water line is installed using horizontal directional drilling, all "nonmetallic" line shall have #12 AWG TW (thermal-weather resistant) coated conductor installed over (on top of) the Water Line for the reception of a locator transmitter signal. The wire leads shall be brought up, identified and protected in valve boxes, on service risers or any other convenient location. The Contractor shall bare approximately two feet of wire at each terminal end for the transmitter connection and increased conductivity.

PART 3 EXECUTION

3.1 EXCAVATION

Excavation shall be performed to the lines and grades required. Earth excavation shall include removal and disposal of material not classified as rock excavation. During excavation, material satisfactory for backfilling shall be stockpiled in an orderly manner at a distance from the banks of the trench equal to 1/2 the depth of the excavation, but in no instance closer than 600 millimeters. Excavated material not required or not satisfactory for backfill shall be removed from the site. No material shall be removed from the project site without prior approval from the Contracting Officer. The Contractor shall notify the Contracting Officer if any material to be disposed of is found to contain hazardous, toxic, biological or radiological substances. Previous site investigations and Sampling requirements shall be in conformance with Section 01450 CHEMICAL DATA QUALITY CONTROL. Grading shall be done as may be necessary to prevent surface water from flowing into the excavation, and any water accumulating shall be removed to maintain the stability of the bottom and sides of the excavation. Unauthorized overexcavation shall be backfilled in accordance with paragraph BACKFILLING AND COMPACTION at no additional cost to the Government.

3.1.1 Trench Excavation Requirements

The trench shall be excavated as recommended by the manufacturer of the

pipe to be installed. Trench walls below the top of the pipe shall be sloped, or made vertical, and of such width as recommended in the manufacturer's installation manual. Where no manufacturer's installation manual is available, trench walls shall be made vertical. Trench walls shall be protected from cave-in in accordance with 29 CFR 1926, Subpart P in addition to those outlined in Section 01351 SAFETY, HEALTH, AND EMERGENCY RESPONSE (HTRW). Vertical trench walls more than 0.915 meters, high shall be shored. Trench walls which are cut back shall be excavated to at least the angle of repose of the soil. Special attention shall be given to slopes which may be adversely affected by weather or moisture content. The trench width below the top of pipe shall not exceed 600 mm plus pipe outside diameter (O.D.) for pipes of less than 600 mm inside diameter. Where recommended trench widths are exceeded, redesign, stronger pipe, or special installation procedures shall be utilized by the Contractor. The cost of redesign, stronger pipe, or special installation procedures shall be borne by the Contractor without any additional cost to the Government.

3.1.1.1 Bottom Preparation

The bottoms of trenches shall be accurately graded to provide uniform bearing and support for the bottom quadrant of each section of the pipe. Bell holes shall be excavated to the necessary size at each joint or coupling to eliminate point bearing. Stones of 75 millimeters or greater in any dimension, or as recommended by the pipe manufacturer, whichever is smaller, shall be removed to avoid point bearing.

3.1.1.2 Removal of Unyielding Material

Where unyielding material is encountered in the bottom of the trench, such material shall be removed 150 millimeters () below the required grade and replaced with suitable materials as provided in paragraph BACKFILLING AND COMPACTION.

3.1.1.3 Removal of Unstable Material

Where unstable material is encountered in the bottom of the trench, such material shall be removed to the depth directed and replaced to the proper grade with select granular material as provided in paragraph BACKFILLING AND COMPACTION. When removal of unstable material is required due to the Contractor's fault or neglect in performing the work, the resulting material shall be excavated and replaced by the Contractor without additional cost to the Government.

3.1.1.4 Excavation for Appurtenances

Excavation for manholes, catch-basins, inlets, or similar structures shall be of sufficient size to permit the placement and removal of forms for the full length and width of structure footings and foundations as shown. . Loose disintegrated rock and thin strata shall be removed. Removal of unstable material shall be as specified above. When concrete or masonry is to be placed in an excavated area, special care shall be taken not to disturb the bottom of the excavation. Excavation to the final grade level shall not be made until just before the concrete or masonry is to be placed.

3.1.1.5 Jacking, Boring, and Tunneling

Unless otherwise indicated, excavation shall be by horizontal directional drilling except that sections of a trench may be jacked and bored under the

railroad track. Pits and excavation may be necessary around buildings, utility junctions, utility fixtures, and jacking and boring pits. Horizontal directional drilling shall be in accordance with Section 02540 MINI-HORIZONTAL DIRECTIONAL DRILLING and in accordance with the drawings. Jacking and Boring shall be performed when the water pipe is installed under railroad tracks in accordance with Section 02453 JACKING AND BORING. Prior to jacking and boring under the railroad alignments, the Contractor shall notify the American Ordinance Safety Office and the Contractor Officer. All utility interruptions shall be coordinated through American Ordinance and the Contracting Officer.

3.1.2 Stockpiles

Stockpiles of satisfactory and unsatisfactory material shall be placed and graded as specified. Stockpiles shall be kept in a neat and well drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be cleared, grubbed, and sealed by rubber-tired equipment, excavated satisfactory and unsatisfactory materials shall be separately stockpiled as indicated below. Stockpiles of satisfactory materials shall be protected from contamination which may destroy the quality and fitness of the stockpiled material. If the Contractor fails to protect the stockpiles, and any material becomes unsatisfactory, such material shall be removed and replaced with satisfactory material from approved sources at no additional cost to the Government. Locations of stockpiles of satisfactory materials shall be subject to prior approval of the Contracting Officer.

Removed uncontaminated soil and contaminated (explosive or metals) soil from the excavation pits found **above** the groundwater level, shall be stockpiled and used as backfill in the same excavated hole prior to using borrow material. Removed uncontaminated soil and contaminated (explosive or metals) soil from the excavation pits found **below** the groundwater level shall be stockpiled onsite until further disposition. Confirmation soil and groundwater sampling and testing shall be conducted by the Contractor at the excavated pits listed in SECTION 01450 CHEMICAL DATA QUALITY CONTROL.

After the excavated soil has been removed from the excavation pits or after excavation is complete, the soil shall be sampled and tested with the procedures as specified in SECTION 01450 CHEMICAL DATA QUALITY CONTROL. Excavated soil found **above** the groundwater level that is determined to be contaminated shall be used as backfill in the excavation hole. Excavated soil found **below** the groundwater level that is determined to be contaminated, shall be considered a changed condition and shall be covered by and in accordance with Contract Clauses: "Changes". The Contractor shall report results indicating that the soil is contaminated the same day it is discovered to the Contracting Officer and wait for further instructions.

Excavated soil that is considered contaminated shall be stockpiled as specified here in. Uncontaminated soil shall be stockpiled separately from the contaminated soil, a safe distance away from, but adjacent to, the excavation. Allowable stockpiles of contaminated soil shall be placed on an impermeable geomembrane a minimum of 3 layers, each 0.762 mm thick, and covered with a 0.254 mm sheet of geomembrane as specified. The geomembrane shall be placed to prevent the stockpiled soil from coming into contact with surface water run-off. The geomembrane cover shall prevent rain or surface water from coming into contact with the contaminated soil. The excavated soil is assumed to be uncontaminated until proven to be contaminated with explosives or metals by analysis. *The excavated soil*

shall be assumed to be uncontaminated for bidding purposes.

Drill Cuttings from the Jack and Bore and the Horizontal Directional Drilling operations shall be sampled and tested with the procedures as specified in SECTION 01450 CHEMICAL DATA QUALITY CONTROL prior to disposal. Drill Cuttings shall be removed and disposed at off site, state permitted disposal facility. Drill Cuttings are assumed to be uncontaminated until proven to be contaminated with explosives or metal by analysis.

3.2 BACKFILLING AND COMPACTION

Backfill material shall consist of satisfactory material, select granular material, or initial backfill material as required. Backfill shall be placed in layers not exceeding 150 millimeter loose thickness for compaction by hand operated machine compactors, and 200 mm loose thickness for other than hand operated machines, unless otherwise specified. Each layer shall be compacted to at least 95 percent maximum density for cohesionless soils and 90 percent maximum density for cohesive soils, unless otherwise specified.

3.2.1 Trench Backfill

. The trench shall be backfilled to 0.61 meters above the top of pipe prior to performing the required pressure tests. The joints and couplings shall be left uncovered during the pressure test.

3.2.1.1 Replacement of Unyielding Material

Unyielding material removed from the bottom of the trench shall be replaced with select granular material or initial backfill material.

3.2.1.2 Replacement of Unstable Material

Unstable material removed from the bottom of the trench or excavation shall be replaced with select granular material placed in layers not exceeding 150 millimeters loose thickness.

3.2.1.3 Bedding and Initial Backfill

Initial backfill material shall be placed and compacted with approved tampers to a height of at least one foot above the utility pipe or conduit. The backfill shall be brought up evenly on both sides of the pipe for the full length of the pipe. Care shall be taken to ensure thorough compaction of the fill under the haunches of the pipe.

3.2.1.4 Final Backfill

The remainder of the trench, except for special materials for roadways, and railroads , shall be filled with satisfactory material. Backfill material shall be placed and compacted as follows:

- a. Roadways, and Railroads(excavated open pits): Backfill shall be placed up to the elevation at which the requirements in Section 02563 (IOWA) RIGID, FLEXIBLE AND CRUSHED ROCK PAVEMENTS, AGGREGATE SURFACING, AND CONCRETE SIDEWALK . Water flooding or jetting methods of compaction will not be permitted.
- b. Sidewalks, Turfed or Seeded Areas and Miscellaneous Areas: Backfill shall be deposited in layers of a maximum of 300 mm

loose thickness, and compacted to 85 percent maximum density for cohesive soils and 90 percent maximum density for cohesionless soils. Compaction by water flooding or jetting will not be permitted. This requirement shall also apply to all other areas not specifically designated above.

3.2.2 Not Used

3.3 SPECIAL REQUIREMENTS

Special requirements for both excavation and backfill relating to the specific utilities are as follows:

3.3.1 Not Used

3.3.2 Water Lines

Trenches shall be of a depth to provide a minimum cover of 1.53 meters (5 feet) from the existing ground surface, or from the indicated finished grade, whichever is lower, to the top of the pipe; except where the water lines crosses under railroad track, provide a minimum cover of 1.83 meters (6 feet) from the existing ground surface. For fire protection yard mains or piping, an additional 150 millimeters (6 inches) of cover is required.

3.3.3 Not Used

3.3.4 Not Used

3.3.5 Plastic Marking Tape

Warning tapes shall be installed directly above the pipe, at a depth of 450 millimeters below finished grade for areas not Horizontal Directional Drilled or Boring and Jacking unless otherwise shown.

3.4 TESTING

Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government.

3.4.1 Testing Facilities

Tests shall be performed by an approved commercial testing laboratory or may be tested by facilities furnished by the Contractor. No work requiring testing will be permitted until the facilities have been inspected and approved by the Contracting Officer.

3.4.2 Testing of Backfill Materials

Classification of backfill materials shall be determined in accordance with ASTM D 2487 and the moisture-density relations of soils shall be determined in accordance with ASTM D 1557. A minimum of one soil classification and one moisture-density relation test shall be performed on each different type of material used for bedding and backfill.

3.4.3 Field Density Tests

Tests shall be performed in sufficient numbers to ensure that the specified density is being obtained. A minimum of one field density test per lift of backfill for every 152.5 meters (of installation shall be performed. One moisture density relationship shall be determined for every 1500 cubic meters of material used. Field in-place density shall be determined in accordance with ASTM D 1556, ASTM D 2167, and ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted using the sand cone method as described in paragraph Calibration of the ASTM publication. ASTM D 2922 results in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job, on each different type of material encountered, at intervals as directed by the Contracting Officer. Copies of calibration curves, results of calibration tests, and field and laboratory density tests shall be furnished to the Contracting Officer. Trenches improperly compacted shall be reopened to the depth directed, then refilled and compacted to the density specified at no additional cost to the Government.

3.4.4 Not Used

-- End of Section --

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SECTION 02543

JACKING AND BORING

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SECTION 02543

JACKING AND BORING
05/00

PART 1 GENERAL

Attachments: Long-Term Monitoring Report (Fall 2000)

Contractor shall submit Schedules. Discuss the feasibility of the design with respect to time, depth, tolerances, materials with respect to settlement, excavation, shoring, and dewatering impacts. Contractor shall also submit qualifications of boring and jacking Supervisor/Foreman.

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

American Society of Testing and Materials (ASTM)

| | |
|-------------|--|
| ASTM A 139 | (1996e1) Electric-Fusion (Arc)-Welded (Sizes NPS 4 and Over) |
| ASTM C 76M | (1999a) Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (Metric) |
| ASTM C 443 | (1994) Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets |
| ASTM C 1208 | (1995) Vitrified Clay Pipe and Joints for Use in Jacking, Sliplining, and Tunnels |

CODE OF FEDERAL REGULATIONS (CFR)

| | |
|-------------|---|
| 29 CFR 1910 | Occupational Safety and Health Standards |
| 29 CFR 1926 | Safety and Health Regulations for Construction |

Engineering Manual (EM)

| | |
|------------|--|
| EM 385-1-1 | US Army Corps of Engineers, Safety and Health Requirements Manual, 1996 |
|------------|--|

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Protective Light Weight Concrete; G-ED.

Contractor shall submit type, mix, strength, and brand of protective light weight concrete 30 days prior to Boring and Jacking.

Emergency Contingency Plan; G-RE

An emergency contingency plan which will provide for the adequate closure of the operation and filling of void space that may develop between the pipe and excavated ground surface following an unanticipated loss and/or potential loss of soil and groundwater along the conduit alignment. The plan shall also address closure of alignment due to refusal of pipe. The plan shall provide measures that when implemented will adequately grout-fill all un-anticipated voids created between the pipe and the excavation surface in order to prevent any ground surface settlement along the alignment.

The plan should contain details of emergency grout mix proportions, slump, and design strength, as well as equipment and grouting procedures including specified injection pressures and methods of void filling verification. The plan should also contain details of verifying, recording and reporting the implementation of the plan.

Work Plan; G-RE

Jacking and Boring Equipment; G-RE

Provide Data to include proposed type and size of equipment, guidance systems and method of grade and alignment adjustments and bracing. Provide information on overcut and distance between auger and carrier pipe.

Jacking Details; G-RE

Thrust block and jacking frame design and details, including anticipated primary and intermediate jacking loads; reaction transfer calculations and arrangement and position of primary and intermediate jacks, thrust rings, jacking controls, and pressure gauges.

Detailed methods proposed to cushion, protect, and distribute jacking forces at pipe joints. Provisions for identifying and protecting adjacent utilities and structures.

Dewatering and Ground Water Control; G-RE

Layout of jacking and receiving shafts and details such as launching seals, shoring, bracing, and groundwater removal.

Layout of perimeter surface construction and drainage control around shafts.

SURFACE SETTLEMENT MONITORING; G-RE

Proposed layout of surface settlement/heave monitoring points.

SD-02 Shop Drawings

As-Builts; G-ED

As-Builts drawings/details shall include all alignments, depths, and known distances from storm drains, electrical alignments, water lines and railroad alignments. Contractor shall indicate type and size of pipe, existing seals, and joints.

SD-01 Preconstruction Submittals

Schedule; G-RE

Contractor shall submit a Schedule for installing Carrier Pipe under the Railway alignment. Contractor shall submit alignment 90 days before construction. ID any unknown utilities. Within 60 days of installing Carrier Pipe, Contractor shall submit locations for chemical sampling for industrial hygiene purposes (alignment and utility unknowns). After chemical sampling result submit Health and Safety Plan 30 days prior to commencing Boring and Jacking Work.

Qualifications; G-ED

Submit documentation showing two years of Boring & Jacking experience for the supervisor and company, linear feet of installation, 10 similar projects showing date, duration of work, location, project owner information (i.e., name, address, telephone number, contact person). By similar the list should include each one of the following types of conditions:

diameter of pipe 200 millimeters to 250 millimeters
depth 1.846 meters to 2.154 meters
type of pipe
settlement restrictions 6.4 millimeters to 12.7 millimeters

Accident Prevention Plan;; G-RE

See Specification Section 01400 SPECIAL SAFETY REQUIREMENTS and Specification Section 01351 SAFETY, HEALTH, AND EMERGENCY RESPONSE (HTRW/UST) of these specifications for requirements for the Accident Prevention Plan (APP). Ensure that all health and safety protocols related to jacking and boring activities are discussed in the APP, including confined space procedures (if applicable). Work shall be performed in accordance with the requirements of 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and other references as listed herein. Matters of interpretation of the standards shall be submitted to the Contracting Officer for resolution before starting work. Where the regulations conflict, the most stringent requirements shall apply.

SD-07 Certificates

Certification Safety Personnel; G-RE

Evidence of OSHA certification or license for its site safety representative and the personnel responsible for gas testing. The Contractor's Site Safety Representative shall provide the engineer with a

copy of on-site safety practices and an emergency plan in accordance with OSHA requirements prior to start of work.

1.3 DEFINITIONS

1.3.1 Carrier Pipe

The tube (Concrete Reinforced or Steel) which protects the HDPE Water Line under the Railroad Alignments.

1.3.2 Boring and Jacking

A process of simultaneously jacking pipe into earth while rotating augers to remove spoils.

1.4 QUALIFICATIONS

Contractor shall submit the following qualifications.

1.4.1 Contractors Experience

Submit documentation showing two years of Boring and Jacking experience with at least 10,000 meters of Boring Jacking installations to include a list of a minimum of 10 projects similar in scope (length of boring, type of soil conditions, type of pipe diameter of pipe and depth) and value to the project specified in the contract documents. Contractor shall submit main Supervisor Qualifications with proposal. Contractor shall submit the other Qualifications 30 days prior to Boring and Jacking. Information must include, but not be limited to, date, duration of work, location, pipe information (i.e., length, diameter, depth of installation, pipe material, etc.), project owner information, (i.e., name, address, telephone number, contact person), and the contents handled by the pipeline.

1.4.2 Qualifications Supervisors

Submit a list of field supervisory personnel and their experience with guided boring operations. At least one of the field supervisors listed must be at the site and be responsible for all work at all times when guided boring operations are in progress. Guided boring operations will not proceed until the resume(s) of the Contractor's field supervisory personnel have been received and reviewed by the Contracting Officer.

1.4.3 Certification Safety Personnel

Provide qualifications of Safety personnel within 30 days of Boring and Jacking. Evidence of OSHA certification or license for its Site Safety Representative. The Contractor's site safety representative shall provide the engineer with a copy of on-site safety practices and an emergency plan in accordance with OSHA requirements prior to start of work.

1.5 GEOTECHNICAL INVESTIGATION

The government makes no representation as to the correctness of the geotechnical reports, nor as to the locations of the boring holes, nor that the geotechnical report represents a cross section of the material to be encountered in performing excavation and earthwork on the project. Any use made of the geotechnical information by the Contractor is at the sole risk of the Contractor. The Contractor has the responsibility to satisfy

himself independently from other sources regarding the character and amount of rock, gravel, sand, silt, organic materials, groundwater, and all other material to be encountered in the work to be performed.

1.6 SYSTEM DESCRIPTION

1.6.1 Work Plan

Contractor shall submit a work plan 90 days prior to Boring and Jacking with the following items:

1.6.1.1 Jacking and Boring Equipment

Provide data to include proposed type and size of equipment, guidance systems and method of grade and alignment adjustments. Jacks shall have sufficient size to move pipe to pipe's greatest distance from jacking pit. A horizontal boring machine shall be capable of boring to the proper diameter and length, maintaining grade and alignment within the tolerances as indicated herein. Provide information on bracing of the system. Bracing shall be capable of withstanding pressure generated by jacks when jacking pipe for pipe's total length. Contractor shall provide information on overcut and distance between auger and carrier pipe. The maximum allowable overcut shall not be greater than 1 inch larger in radius than the outside diameter of the pipe. The annular space created by the overcut shall be completely pressure-filled with an approved bentonite lubricant.

1.6.1.2 Jacking Details

The thrust block backstop shall be square with the proposed pipe alignment and shall be designed to withstand the maximum jacking pressure to be used with a factor of safety of at least 2.0, without excessive deflection or displacement. The Contractor shall submit the following

Including anticipated primary and intermediate jacking loads; reaction transfer calculations and arrangement and position of primary and intermediate jacks, thrust rings, jacking controls, and pressure gauges.

Contractor shall submit detailed methods proposed to cushion, protect, and distribute jacking forces at pipe joints.

Contractor shall submit layout of boring alignments 90 days prior to boring activity.

1.6.2 Utility Protection

Provisions for identifying and protecting adjacent utilities and structures.

1.6.3 Dewatering and Ground Water Control

Dewatering for groundwater control shall be utilized only at the jacking and receiving pits.

a. Contractor shall provide a layout of jacking and receiving shafts and details such as launching seals, shoring, bracing, and groundwater removal.

b. Contractor shall provide layout of Drainage Control and layout of perimeter surface construction.

c. Ground water varies seasonally and can be within 0.61 meters to 3.66 meters of the surface due to Artesian Conditions the day after drilling. See the change in Groundwater elevation near Building 3A-05-1 (IA00-23, IA00-24, and IA00-25) as shown on Sheet G1.11. Ground water is assumed deeper than 1.83 meters. Ground water shallower than 1.83 meters shall be considered a change in site condition. If Ground water is encountered, see Specification Section 01355 ENVIRONMENTAL PROTECTION for disposal of Ground Water. See Specification Section 01355 ENVIRONMENTAL PROTECTION for disposal of Ground Water.

d. The following Groundwater Elevation was taken in November 1999 by Harza Engineering Company. Location of Wells is shown in Appendix A.1 to the Boring and Jacking Specification. Groundwater Monitoring Well Inventory (Module 1) is attached in Appendix A.2 to Boring and Jacking Specification. For Chemistry Information on RDX See SPECIFICATION SECTION 01450 CHEMISTRY DATA QUALITY CONTROL.

| Well | | GROUND ELEVATION | GROUND | | GROUND WATER ELEVATION | GROUND WATER DEPTH FROM SURFACE |
|--------|-----------|---------------------|---------------------------|-------------------------|---------------------------|--|
| | | | TOP OF COLUMN (TOC) | WATER DEPTH (TOC) | | |
| JAW-15 | (Shallow) | 710.68 | 712.88 | 9.4 | 703.48 | 7.20 feet |
| JAW-16 | (Bedrock) | 710.98 | 713.07 | 19.91 | 693.16 | 17.82 feet |
| JAW-17 | (Shallow) | 709.33 | 711.83 | 5.89 | 705.94 | 3.39 feet |
| JAW-18 | (Bedrock) | 709.24 | 711.74 | DRY | 661.74*Bed | 47.50 feet |
| JAW-19 | (Shallow) | 713.23 | 715.77 | DRY | 700.77 | 12.46 feet |
| JAW-20 | (Shallow) | 711.90 | 713.82 | 24.29 | 689.53 | 22.37 feet |
| JAW-21 | (Bedrock) | 711.88 | 714.66 | 8.0 | 706.88 | 5.00 feet |
| JAW-22 | (Shallow) | 711.37 | 713.57 | 14.3 | 697.07 | 16.50 feet |

1.6.4 As-Builts

Contractor shall submit as-builts 30 days after construction is complete. As-Builts drawings shall include all alignments, depths, and known distances from sub drains, water lines, and electrical alignments. Contractor shall indicate type and size of pipe, grouts, existing seals, and joints.

1.7 PERMIT REQUIREMENTS

The Contractor shall comply with all requirements associated with permits, easements, and agreements. The Contractor shall obtain all permits necessary for construction. The Contractor is advised that the locations of underground utilities shown on the drawings are approximate, and other utilities may exist that are not shown on the drawings. The Contractor shall notify the Contracting Officer and the American Ordinance a minimum of twenty-one (21) working days prior to the boring operations. All

necessary permits and marking of any existing utilities shall be completed before the start of work. The Contractor shall restore all impacted improvements, including pavement and base courses, in kind and to its pre-construction condition upon completion of the project.

PART 2 PRODUCTS

2.1 PIPE MATERIALS

2.1.1 Carrier Pipe

The carrier pipe shall have an inside diameter of 250 millimeters as shown on drawings. The Contractor shall seal the end of the carrier pipe after installing interior lines with an appropriate material. Carrier Pipe shall have a flush interior face that does not retard slip lining a carrier pipe with a HDPE Water Line. The Contractor may choose the type of pipe as listed below unless otherwise shown on the drawings.

a. Portland cement concrete pipe shall conform to ASTM C 76M, Class IV or V, Wall B or C. Concrete pipe shall have a minimum compressive strength of 5000 psi at 28-days.

b. Steel shall conform to ASTM A 139, Grade B.

2.2 JOINTS

a. Joint design for segmental portland cement concrete pipe shall conform to ASTM C 1208. Joint seals shall be rubber gaskets conforming to ASTM C 443.

Contractor shall weld all joints on Steel casing pipe conforming to ASTM A 139, Grade B.

2.3 PROTECTIVE LIGHT WEIGHT CONCRETE

Contractor shall submit a suitable protective material such as light weight concrete/fly ash mixture to seal the ends only 0.61 meters of the Carrier line. Contractor shall submit type, strength, and brand of protective light weight concrete 30 days prior to Boring & Jacking.

PART 3 EXECUTION

3.1 GENERAL

a. Contractor shall identify locations requiring jacking, receiving, and mud pits and submit for approval 90 days prior to commencement of work.

b. Based on approved pit locations contractor shall coordinate for utility clearances.

c. Contractor shall collect soil samples to obtain if area is contaminated (See Specification Section 01450 CHEMICAL DATA QUALITY CONTROL) and collect geotechnical information and submit results for approval 60 days prior to commencement of work.

d. Contractor shall field verify depths and location of all known utilities by vacuum extraction of soils, hand pits, manhole inspection to

physically verify utilities along the alignment.

e. Unless otherwise specified, the methods and equipment used in jacking pipe shall be optional with the Contractor, provided that the proposed method is approved by the Contracting Officer. Such approval, however, shall in no way relieve the Contractor of the responsibility for a making a satisfactory installation meeting the requirements set forth herein. The installation, methods and materials used shall comply with the requirements and conditions of all required permits. The jacking method selected by the Contractor shall provide full support and control of the ground during all phases of the work and shall permit control of alignment and grade. The jacking equipment shall provide sufficient thrust to jack the carrier into place from the jacking pit to the receiving pit and the reaction shall be properly transferred to the walls of the pit and not damage existing electrical lines near jacking face. Excavating in advance of the jacking head shall not be permitted and every effort shall be made to avoid loss of earth outside of jacking head. The jacking and receiving pits, and the carrier pipe shall be maintained in a clean and orderly condition and no debris, slurry, waste or unused materials or equipment shall be allowed to accumulate or remain within the work area. Slicing or jetting with water shall not be permitted. Material from the boring operation shall be removed from the site daily. Standing or flowing water shall not be permitted in the pit invert. The Contracting Officer may enter upon the work at any time to check alignment and grade, and the Contractor shall cooperate in such checking by clearing obstacles and sight lines. If it is determined that the carrier is not on the design alignment or grade, the Contractor shall immediately make corrective measures if necessary. The entry point through the walls of the jacking pit and receiving pit shall be properly protected against inflow of soil materials. During boring and jacking operations, particular care shall be exercised to avoid over excavation and to assure bearing against the ground on all sides of the carrier pipe. No gasoline powered equipment shall be permitted in jacking and receiving shafts. Electrical, hydraulic and air powered equipment will be acceptable, subject to applicable local, state and federal regulations.

f. For excavation and backfill contractor shall follow Specification Section 02316. Drill Cuttings from the Boring and Jacking shall be disposed per Specification Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS and Specification Section 01450 CHEMICAL DATA QUALITY CONTROL prior to disposal.

3.2 SITE CONDITIONS

Drilling operations must not interfere with, interrupt or endanger surface and activity upon the surface. The light rail supplying Line 3A is to remain in operation. Utilities are to be maintained at all times except as designated.

3.3 JACKING AND BORING

It is the contractor's responsibility to locate and design jacking and receiving pits at the locations shown on the drawings, an excavation method, a jacking thrust reaction structure and all other items required for successful completion of the work. The excavation method selected by the Contractor shall provide full and immediate support to the working face by the use of a shelf with mechanically operated doors, provision for installing and supporting breast boards or other positive means. The entry points through the walls of the jacking pit and receiving pit shall be

properly protected against inflow of soil materials. During boring and jacking operations, particular care shall be exercised to avoid overexcavation and to assure bearing against the ground on all sides of the carrier pipe. When material tends to cave in from outside the limits of the pipe, the face of the pipe, the face of excavation shall not extend beyond the end of the pipe. The leading section of the pipe being bored or jacked shall have a jacking head securely anchored to it to assist in maintaining the proper alignment of the pipe. The joints of the sections of casing to be jacked shall be welded with a continuous circumferential weld. It shall be the Contractor's responsibility to provide stress transfer across the joints which are capable of resisting the jacking forces involved. Excavated material shall be removed from the conduit as excavation progresses and no accumulation of such material within the conduit shall be permitted.

3.4 SCHEDULE

The Contractor has the following scheduling constraints. Contractor shall submit a schedule for Boring and Jacking.

3.5 REFUSAL

Should the Contractor meet refusal during the jacking operation, he shall determine the cause of refusal and take additional measures as required to proceed. Should it become impossible to proceed on the original plan alignment, the Contractor shall provide a revised alignment adjacent to that of the planned alignment. The Contracting Officer shall review and approve the revised alignment plan prior to the start of jacking and boring. The Contractor shall then proceed with the installation on the revised alignment. In no case shall the Contractor remove any casing installed. Contractor shall fully grout all failed alignments.

3.5.1 Emergency Contingency Plan

Contractor shall submit an emergency contingency plan 30 days prior to commencing Boring alignments. The Plan shall provide for the adequate closure of the operation and filling of void space that may develop between the pipe and excavated ground surface following an unanticipated loss and/or potential loss of soil and groundwater along the conduit alignment. The plan shall provide measures that when implemented will adequately grout-fill all un-anticipated voids created between the pipe and the excavation surface in order to prevent any ground surface settlement along the alignment.

The plan should contain details of emergency grout mix proportions, slump, and design strength, as well as equipment and grouting procedures including specified injection pressures and methods of void filling verification. The plan should also contain details of verifying, recording and reporting the implementation of the plan.

3.6 TOLERANCES

Any deviation with respect to the design alignment shall be recorded at least once per foot and the records shall be submitted to the Contracting Officer. Contractor shall install carrier pipe a minimum of 1.83 meters below ground surface. The ultimate methods and the determination of meeting specified tolerances is the responsibility of the Contractor. If the excavation is off line, the Contractor is responsible for additional

pipings/alignments, shoring to hook system into the original plan. All corrective work, including new design if required, shall be performed by the Contractor at no additional cost to the government, and is subject to the approval of the Contracting Officer.

-- End of Section --

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LONG-TERM MONITORING REPORT

FALL 1999

IOWA ARMY AMMUNITION PLANT (IAAAP)
Middletown, Iowa

Prepared for:



U.S. ARMY CORPS OF ENGINEERS
Omaha District

Prepared by:

HARZA ENGINEERING COMPANY

June 2000

02453AT-1

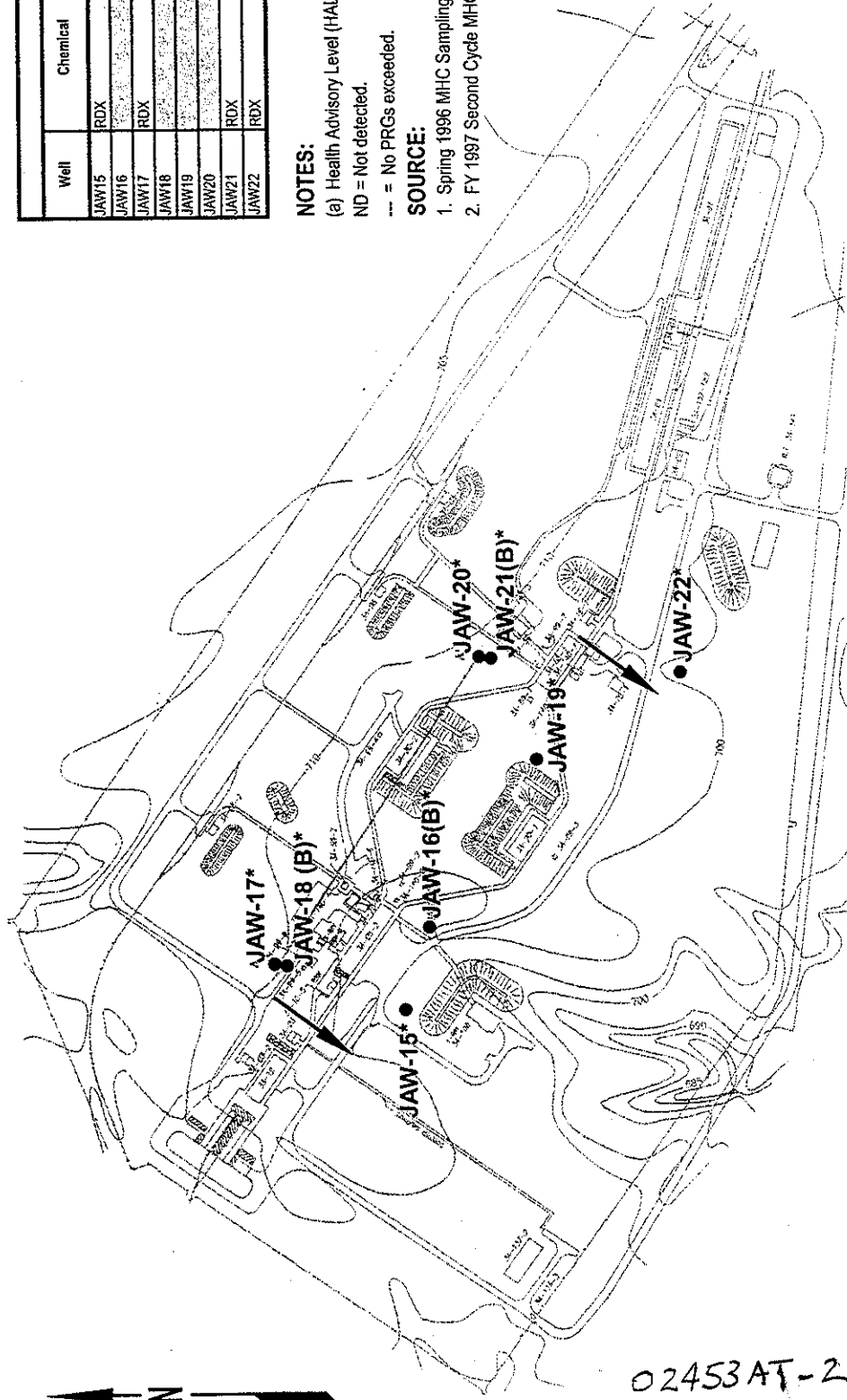
| LINE 3A | | | | | |
|---------|----------|----------------------|-------------------|-------------------|-----------|
| Well | Chemical | Concentration (ug/L) | | | |
| | | PRG | 1996 ¹ | 1997 ¹ | Fall 1999 |
| JAW15 | RDX | 2 (a) | ND | 36 | 32 |
| JAW16 | | | | | |
| JAW17 | | | | | |
| JAW18 | RDX | 2 (a) | 10 | 10 | 9.6 |
| JAW19 | | | | | Dry |
| JAW20 | | | | | Dry |
| JAW21 | RDX | 2 (a) | 21 | 19 | 14 |
| JAW22 | RDX | 2 (a) | 1.4 | 48 | 240 |

NOTES:

- (a) Health Advisory Level (HAL).
 ND = Not detected.
 --- = No PRGs exceeded.

SOURCE:

1. Spring 1996 MHC Sampling.
2. FY 1997 Second Cycle MHC Sampling.



02453 AT-2

LEGEND:

- Monitoring Well
- (B) Bedrock Well
- * In Previous Monitoring Program
- Approximate Direction of Groundwater Flow



Figure 17
CHEMICALS EXCEEDING PRGs, LINE 3A
 FALL 1999 LTM
 IOWA ARMY AMMUNITION PLANT
 Middleton, Iowa

INVENTORY

Groundwater Monitoring Well Inventory (Module 1)

| Well | Drainage | Line | Year | Installed | By | Diam. | Unit | Coordinates | | | Ground | TOC | Top of Screen | | Bottom of Screen | | Screen | Groundwater | | Bedrock | | Comments |
|--------|--------------|------------------------------|------|-----------|----|-------|------|-------------|--------|-------|--------|--------|---------------|--------|------------------|--------|--------|-------------|--------|---------|--------|--------------------------------|
| | | | | | | | | East | North | Depth | Elev. | | Depth | Elev. | Depth | Elev. | Length | Depth | Elev. | Depth | Elev. | |
| GZ3-3 | Brush | Line 6 | 1880 | SGS | 4 | 4 | U | 2264337 | 303649 | 13.00 | 722.93 | 725.52 | 5.50 | 717.43 | 11.50 | 717.43 | 6 | 7.85 | 717.87 | NA | NA | Accessible. Labeled 23-3. |
| GZ3-4 | Brush | Line 6 | 1880 | SGS | 4 | 4 | U | 2264327 | 303484 | 28.00 | 725.92 | 725.92 | 18.00 | 703.72 | 28.00 | 693.72 | 10 | 12.20 | 713.71 | NA | NA | Accessible. Labeled 23-4. |
| GZ3-5 | Brush | Line 6 | 1880 | SGS | 4 | 4 | U | 2264561 | 303522 | 20.00 | 722.88 | 726.52 | 8.50 | 714.39 | 18.50 | 704.39 | 10 | 12.85 | 713.67 | NA | NA | Accessible. Labeled 23-5. |
| JAW-1 | Stump | Demolition Area | | Jaycor | | | B | 2254503 | 231010 | 20.00 | 674.45 | 0.00 | 5.00 | 669.45 | 20.00 | 654.45 | 15 | 11.27 | -11.27 | 10.00 | 664.45 | Well ward installed. |
| JAW-2 | Stump | Demolition Area | | Jaycor | | | B | 2254503 | 290453 | 27.00 | 682.75 | 685.04 | 12.00 | 670.75 | 27.00 | 655.75 | 15 | 18.28 | 655.75 | 10.00 | 664.45 | Well ward installed. |
| JAW-3 | Spring | Explosive Disposal Area | | Jaycor | | | B | 2277337 | 301600 | 23.50 | 657.95 | 681.00 | 13.00 | 644.95 | 23.00 | 634.95 | 10 | 14.80 | 645.20 | 8.00 | 648.35 | Well ward installed. |
| JAW-4 | Spring | Explosive Disposal Area | | Jaycor | | | B | 2278360 | 301932 | 17.50 | 684.28 | 686.86 | 7.00 | 677.28 | 17.00 | 667.28 | 10 | 6.54 | 680.32 | NA | NA | Well ward installed. |
| JAW-5 | Spring | Explosive Disposal Area | | Jaycor | | | U | 2278609 | 302368 | 26.00 | 675.40 | 678.00 | 16.00 | 659.40 | 26.00 | 649.40 | 10 | 5.60 | 672.44 | NA | NA | Well ward installed. |
| JAW-6 | Spring | Explosive Disposal Area | | Jaycor | | | U | 2278609 | 302368 | 26.00 | 675.40 | 678.00 | 16.00 | 659.40 | 26.00 | 649.40 | 10 | 5.60 | 672.44 | NA | NA | Well ward installed. |
| JAW-7 | Spring | Explosive Disposal Area | | Jaycor | | | U | 2278609 | 302368 | 26.00 | 675.40 | 678.00 | 16.00 | 659.40 | 26.00 | 649.40 | 10 | 5.60 | 672.44 | NA | NA | Well ward installed. |
| JAW-8 | Brush | Construction Debris Landfill | | Jaycor | | | U | 2285187 | 295355 | 20.00 | 685.43 | 687.57 | 10.00 | 685.43 | 20.00 | 675.43 | 10 | 8.58 | 687.59 | NA | NA | Well ward installed. |
| JAW-9 | Brush | Construction Debris Landfill | | Jaycor | | | U | 2285224 | 295017 | 20.00 | 682.00 | 687.38 | 10.00 | 682.00 | 20.00 | 672.00 | 10 | 11.80 | 685.58 | NA | NA | Well ward installed. |
| JAW-10 | Brush | Construction Debris Landfill | | Jaycor | | | U | 2284910 | 295054 | 25.00 | 686.85 | 688.92 | 9.00 | 687.85 | 24.00 | 662.85 | 15 | 18.30 | 670.54 | NA | NA | Well ward installed. |
| JAW-11 | Spring | North Burn Pad | | Jaycor | | | L | 2276102 | 302278 | 30.00 | 688.50 | 691.01 | 19.00 | 688.59 | 29.00 | 659.59 | 10 | 8.01 | 693.00 | NA | NA | Well ward installed. |
| JAW-12 | Spring | North Burn Pad | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-13 | Spring | North Burn Pad | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-14 | Spring | North Burn Pad | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-15 | Long | Line 3A | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-16 | Long | Line 3A | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-17 | Long | Line 3A | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-18 | Long | Line 3A | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-19 | Long | Line 3A | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-20 | Long | Line 3A | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-21 | Long | Line 3A | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-22 | Long | Line 3A | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-23 | Spring | West Burn Pad | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-24 | Spring | West Burn Pad | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-25 | Spring | West Burn Pad | | Jaycor | | | B | 2276224 | 302095 | 23.00 | 674.13 | 676.81 | 13.00 | 661.13 | 21.00 | 653.13 | 8 | Dry | | 23.00 | 651.13 | Well ward installed. No water. |
| JAW-26 | Long | Inert Disposal Area | | Jaycor | | | L | 2257105 | 298868 | 62.00 | 695.82 | 698.42 | 47.00 | 648.82 | 62.00 | 633.82 | 15 | 31.07 | 697.35 | NA | NA | Well ward installed. |
| JAW-27 | Long | Inert Disposal Area | | Jaycor | | | L | 2257105 | 298868 | 62.00 | 695.82 | 698.42 | 47.00 | 648.82 | 62.00 | 633.82 | 15 | 31.07 | 697.35 | NA | NA | Well ward installed. |
| JAW-28 | Long | Inert Disposal Area | | Jaycor | | | L | 2257105 | 298868 | 62.00 | 695.82 | 698.42 | 47.00 | 648.82 | 62.00 | 633.82 | 15 | 31.07 | 697.35 | NA | NA | Well ward installed. |
| JAW-29 | Long | Inert Disposal Area | | Jaycor | | | L | 2257105 | 298868 | 62.00 | 695.82 | 698.42 | 47.00 | 648.82 | 62.00 | 633.82 | 15 | 31.07 | 697.35 | NA | NA | Well ward installed. |
| JAW-30 | Brush | Line 9 | | Jaycor | | | U | 2264550 | 298868 | 24.50 | 710.97 | 713.47 | 9.00 | 701.97 | 19.00 | 691.97 | 10 | 7.20 | 706.27 | NA | NA | Well ward installed. |
| JAW-31 | Brush | Line 9 | | Jaycor | | | U | 2264550 | 298868 | 24.50 | 710.97 | 713.47 | 9.00 | 701.97 | 19.00 | 691.97 | 10 | 7.20 | 706.27 | NA | NA | Well ward installed. |
| JAW-32 | Long | Fring Site | | Jaycor | | | U | 2258452 | 297970 | 20.00 | 688.47 | 690.73 | 5.00 | 683.47 | 15.00 | 673.47 | 10 | 10.91 | 679.92 | NA | NA | Well ward installed. |
| JAW-33 | Long | Fring Site | | Jaycor | | | B | 2258408 | 297760 | 34.00 | 682.22 | 684.74 | 19.00 | 665.22 | 34.00 | 646.22 | 15 | 12.80 | 671.84 | 30.50 | 651.72 | Well ward installed. |
| JAW-34 | Long | Fring Site | | Jaycor | | | L | 2255404 | 287557 | 34.00 | 682.42 | 684.88 | 11.00 | 677.42 | 15.00 | 667.42 | 10 | 17.88 | 697.22 | NA | NA | Well ward installed. |
| JAW-35 | Long | Fring Site | | Jaycor | | | L | 2255404 | 287557 | 34.00 | 682.42 | 684.88 | 11.00 | 677.42 | 15.00 | 667.42 | 10 | 17.88 | 697.22 | NA | NA | Well ward installed. |
| JAW-36 | Long | Fring Site | | Jaycor | | | L | 2255404 | 287557 | 34.00 | 682.42 | 684.88 | 11.00 | 677.42 | 15.00 | 667.42 | 10 | 17.88 | 697.22 | NA | NA | Well ward installed. |
| JAW-37 | Long | Fring Site | | Jaycor | | | L | 2255404 | 287557 | 34.00 | 682.42 | 684.88 | 11.00 | 677.42 | 15.00 | 667.42 | 10 | 17.88 | 697.22 | NA | NA | Well ward installed. |
| JAW-38 | Long | Fring Site | | Jaycor | | | L | 2255404 | 287557 | 34.00 | 682.42 | 684.88 | 11.00 | 677.42 | 15.00 | 667.42 | 10 | 17.88 | 697.22 | NA | NA | Well ward installed. |
| JAW-39 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-40 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-41 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-42 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-43 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-44 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-45 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-46 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-47 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-48 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-49 | NA | Line 1 | | NA | | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | Well removed by ECC. |
| JAW-50 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-51 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-52 | Brush | Line 1 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-53 | Brush | Line 3 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-54 | Spring/Brush | Perimeter | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-55 | Brush | Line 3 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-56 | Brush | Line 3 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-57 | Brush | Line 3 | | Jaycor | | | U | 2268723 | 305277 | 10.50 | 693.45 | 698.52 | 5.00 | 688.45 | 10.00 | 680.45 | 5 | 5.03 | 690.04 | NA | NA | Well ward installed. |
| JAW-58 | Spring | Fire Training Pt | | Jaycor | | | L | 2275972 | 301091 | 34.00 | 685.93 | 688.80 | 10.00 | 675.93 | 20.00 | 665.93 | 10 | 13.38 | 671.75 | 25.00 | | |

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SECTION 02510

WATER DISTRIBUTION SYSTEM

04/98

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|---|
| ASTM D 1248 | (1998) Standard Specification for Polyethelene (PE) Plastic Extrusion Materials for Wire and Cable |
| ASTM D 2683 | (1998) Standard Specification for Socket-Type Polyethelene (PE) Fittings for Outside Diameter-Controlled Polyethelene Pipe and Tubing |
| ASTM D 3035 | (1998) Standard Specification for Polyethelene (PE) Plastic (SDR-PR) Based on Controlled Outside Diameter |
| ASTM D 3261 | (1998) Standard Specification for Butt Heat Fusion Polyethelene (PE) Plastic Fittings for Polyethelene (PE) Plastic Pipe and Tubing |
| ASTM D 3350 | (1990) Standard Specification for Polyethelene (PE) Plastic Pipe and Fittings Materials |
| ASTM F 645 | (1995) Standard Guide for Selection, Design, and Installation of Thermoplastic Water pressure Piping Systems |
| ASTM D 2657 | (1997) Heat Fusion Joining Polyolefin Pipe and Fittings |
| ASTM D 2774 | (1994) Underground Installation of Thermoplastic Pressure Piping |

AMERICAN WATER WORKS ASSOCIATION (AWWA)

| | |
|-----------|---------------------------------|
| AWWA B300 | (1992) Hypochlorites |
| AWWA B301 | (1992) Liquid Chlorine |
| AWWA C104 | (1995) Cement-Mortar Lining for |

Ductile-Iron Pipe and Fittings for Water

| | |
|-----------|--|
| AWWA C110 | (1993) Ductile-Iron and Gray-Iron Fittings, 3 In. Through 48 In. (75 mm through 1200 mm), for Water and Other Liquids |
| AWWA C111 | (1995) Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings |
| AWWA C151 | (1996) Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids |
| AWWA C153 | (1994; Errata Nov 1996) Ductile-Iron Compact Fittings, 3 In. Through 24 In. (76 mm through 610 mm) and 54 In. through 64 In. (1,400 mm through 1,600 mm) for Water Service |
| AWWA C500 | (1993; C500a) Metal-Sealed Gate Valves for Water Supply Service |
| AWWA C502 | (1994; C502a) Dry-Barrel Fire Hydrants |
| AWWA C509 | (1994) Resilient-Seated Gate Valves for Water Supply Service |
| AWWA C600 | (1993) Installation of Ductile-Iron Water Mains and Their Appurtenances |
| AWWA C606 | (1997) Grooved and Shouldered Joints |
| AWWA C651 | (1992) Disinfecting Water Mains |
| AWWA C800 | (1989) Underground Service Line Valves and Fittings |
| AWWA C901 | (1996) Polyethylene (PE) Pressure Pipe and Tubing, 1/2 In. Through 3 In., for Water Service |
| AWWA C906 | (1996) Polyethylene (PE) Pressure Pipe and Tubing, 4 In. Through 63 In., for Water Distribution |

DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA)

| | |
|------------------------|--|
| DIPRA-Restraint Design | (1997) Thrust Restraint Design for Ductile Iron Pipe |
|------------------------|--|

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)

| | |
|-----------|---|
| MSS SP-80 | (1997) Bronze Gate, Globe, Angle and Check Valves |
|-----------|---|

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

| | |
|------------|--|
| NFPA 24 | (1995) Installation of Private Fire Service Mains and Their Appurtenances |
| NFPA 49 | (1994) Hazardous Chemicals Data |
| NFPA 325-1 | (1994) Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids |
| NFPA 704 | (1996) Identification of the Fire Hazards of Materials for Emergency Response |

NSF INTERNATIONAL (NSF)

| | |
|--------|---|
| NSF 14 | (1998) Plastics Piping Components and Related Materials |
| NSF 61 | (1998) Drinking Water System Components - Health Effects (Sections 1-9) |

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

| | |
|---------------|--|
| SSPC Paint 21 | (1991) White or Colored Silicone Alkyd Paint |
| SSPC Paint 25 | (1991) Red Iron Oxide, Zinc Oxide, Raw Linseed Oil and Alkyd Primer (Without Lead and Chromate Pigments) |

1.2 PIPING

This section covers water supply, distribution and service lines, and connections to building inside the building. The Contractor shall have a copy of the manufacturer's recommendations for each material or procedure to be utilized available at the construction site at all times.

1.2.1 Service Lines

Piping for water service lines 80 mm (3 inches) or smaller in diameter shall be polyethylene, , unless otherwise shown or specified. Piping for water service lines larger than 80 mm (3 inches) shall be high density polyethylene (HDPE), unless otherwise shown or specified. Ductile iron pipe material shall be used only for the Post indicator Valves (PIV's) and for fire hydrants leads.

1.2.2 Distribution Lines 80 mm (3 Inches) or Larger

Piping for water distribution lines 80 mm (3 inches) or larger shall be high density polyethylene (HDPE), unless otherwise shown or specified. Ductile iron shall be used only for the Post indicator Valves (PIV's) and for fire hydrants leads.

1.2.3 Supply Lines 75 mm (3 Inches) or Larger

Piping for water supply lines 80 mm (3 inches) or larger shall be high density polyethylene (HDPE), unless otherwise shown or specified. Ductile iron shall be used only for the Post Indicator Valves (PIV's) and for fire hydrants leads.

1.2.4 Sprinkler Supply Lines

Piping for water lines supplying sprinkler systems for building fire protection shall conform to NFPA 24 from the point of connection with the water distribution system to the inside of the building 1.5 m.

1.2.5 Potable Water Lines

Piping and components of potable water systems which come in contact with the potable water shall conform to NSF 61.

1.2.6 Plastic Piping System

Plastic piping system components (polyethylene, and HDPE) intended for transportation of potable water shall comply with NSF 14 and be legibly marked with their symbol.

1.2.7 Excavation, Trenching, and Backfilling

Excavation, trenching, and backfilling shall be in accordance with the applicable provisions of Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS, except as modified herein.

1.2.8 Horizontal Directional Drilling

The new water line at Line 3A shall be installed using Horizontal Directional Drilling, except when it crosses the railroad track or at the small pits where the water line changes direction. Horizontal Directional Drilling shall be in accordance with the applicable provisions of Section 02540 MINI-HORIZONTAL DIRECTIONAL DRILLING and in accordance with the drawings.

1.2.9 Jacking and Boring

Jacking and Boring shall be in accordance with the applicable provisions of Section 02543 JACKING AND BORING, when water pipe is installed in steel casing pipes under railroad. Boring and Jacking of pipe under railroads will require a **permit** from the Mason and Hangar Safety Office.

1.2.10 Corrosion Protection

Corrosion protection shall be provided for all buried metallic piping, fittings, valves, and other pipe line apputenances, regardless of pipe material. Corrosion protection shall consist of a cathodic protection system in accordance with Section 13110 CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE).

1.2.11 Valves, Hydrants, and Metallic Fittings

All underground metal valves, fire hydrants, and fittings will be coated with a dielectric material and be cathodically protected in accordance with Section 13110 CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE).

1.2.12 Site Investigation Prior to Pipe Installation

The Contractor requirements for site investigation prior to the installation of the water line shall be in accordance with Section 01450 CHEMICAL DATA QUALITY CONTROL. Section 01450 sets forth the Contractor's responsibility for sample collection, handling, reporting, and analysis requirements to ensure compliance with environmental regulations. The

results will be used to gain additional information about site contamination and determine safety requirements during the waterline installation.

1.3 NOT USED

1.4 MANUFACTURER'S REPRESENTATIVE

The Contractor shall have a manufacturer's field representative present at the jobsite during the installation and testing of PE, and/or HDPE, pipe to provide technical assistance and to verify that the materials are being installed in accordance with the manufacturer's prescribed procedures. When the representative feels that the Contractor is installing and testing the PE, and/or HDPE pipe in a satisfactory manner, certification shall be written to note which individuals employed by the Contractor are capable of properly installing the pipe. The field representative shall advise the Contractor of unsatisfactory conditions immediately when they occur. Such conditions include improper diameter of pipe ends, damaged interior liner, poorly prepared joints, improper curing of joints, moving pipe before joints are cured, bending pipe to follow abrupt changes in trench contours, leaving pipe ends open in trench overnight, not properly drying joints after rain storms, exceeding effective adhesive life, sharp objects in trench bed, backfill that could damage pipe, improper procedure for concrete encasement of pipe, omission of thrust blocks at changes in direction or any other condition which could have an adverse effect on the satisfactory completion and operation of the piping system.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Installation;

The manufacturer's recommendations for each material or procedure to be utilized.

Waste Water Disposal Method; .

The method proposed for disposal of waste water from hydrostatic tests and disinfection, prior to performing hydrostatic tests.

Satisfactory Installation; .

A statement signed by the principal officer of the contracting firm stating that the installation is satisfactory and in accordance with the contract drawings and specifications, and the manufacturer's prescribed procedures and techniques, upon completion of the project and before final acceptance.

SD-06 Test Reports

Bacteriological Disinfection; .

Test results from commercial laboratory verifying disinfection.

SD-07 Certificates

Manufacturer's Representative; G-RE.

The name and qualifications of the manufacturer's representative and written certification from the manufacturer that the representative is technically qualified in all phases of PE, and/or HDPE pipe laying and jointing and experienced to supervise the work and train the Contractor's field installers, prior to commencing installation.

Installation; G-RE.

A statement signed by the manufacturer's field representative certifying that the Contractor's personnel are capable of properly installing the pipe on the project.

1.6 HANDLING

Pipe and accessories shall be handled to ensure delivery to the trench in sound, undamaged condition, including no injury to the pipe coating or lining. If the coating or lining of any pipe or fitting is damaged, the repair shall be made by the Contractor in a satisfactory manner, at no additional cost to the Government. No other pipe or material shall be placed inside a pipe or fitting after the coating has been applied. Pipe shall be carried into position and not dragged. Use of pinch bars and tongs for aligning or turning pipe will be permitted only on the bare ends of the pipe. The interior of pipe and accessories shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations by plugging or other approved method. Before installation, the pipe shall be inspected for defects. Material found to be defective before or after laying shall be replaced with sound material without additional expense to the Government. Rubber gaskets that are not to be installed immediately shall be stored in a cool and dark place.

1.6.1 Not Used

1.6.2 Polyethylene (PE) Pipe Fittings and Accessories

PE pipe, fittings, and accessories shall be handled in conformance with AWWA C901.

1.6.3 High Density Polyethelene (HDPE) Pipe Fittings

HDPE pipe and fittings shall be handled in conformance with AWWA C906 and stored in accordance with the manufacturer's recommendations. Storage facilities shall be classified and marked in accordance with NFPA 704, with classification as indicated in NFPA 49 and NFPA 325-1.

PART 2 PRODUCTS

2.1 PIPE

Pipe shall conform to the respective specifications and other requirements specified below.

2.1.1.1 Not Used

2.1.1.2 Plastic Pipe

2.1.1.2.1 PE Plastic Pipe

Pipe, tubing, and heat-fusion fittings shall conform to AWWA C901 for sizes 12.5 mm (1/2 inch) through 75 mm (3 inch)..

2.1.1.2.2 HDPE Pipe

Pipe, couplings and fittings shall be manufactured of material conforming to AWWA C906, working pressure not less than 1.03 MPa (150 psi), unless otherwise shown or specified. Pipe shall have a standard dimension ratio (SDR) of 11 (PE 3408), for sizes 100 mm (4 inch) through 300 mm (12 inch). HDPE pipe and fittings shall be PE 345434C in accordance with ASTM D 3035, ASTM D 1248 and ASTM D 3350, Type III.

2.1.1.2.3 Not Used

2.1.1.3 Not Used

2.1.1.4 Not Used

2.1.1.5 Ductile-Iron Pipe

Ductile-iron pipe, fittings, and special shall conform to AWWA C151, working pressure not less than 1.03 MPa (150 psi) unless otherwise shown or specified. Pipe shall be cement-mortar lined in accordance with AWWA C104.

Linings shall be standard. When installed underground, pipe shall be cathodically protected in accordance with Section 13110 CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE).

2.2 FITTINGS AND SPECIALS

2.2.1 Not Used

2.2.2 Plastic Polyethylene Pipe System

2.2.2.1 PE Pipe

Heat-Fusion Fittings for Pe pipe shall be conform to AWWA C901.

2.2.2.2 HDPE Pipe

The pipe, fittings, and joining materials shall meet the requirements of one or more of the following component product standards:

a. Butt Heat Fusion Polyethylene (PE) Plastic Fittings. Pipe and tubing shall conform to the requirements of ASTM D3261.

b. Socket-Type Polyethylene (PE) Plastic Fittings. Pipe shall be in accordance with ASTM D2683 for outside diameter controlled PE pipe.

c. Electrofusion Polyethylene (PE) Plastic Fittings to be used on splices connections only. Pipe shall conform with ASTM F1055 for outside diameter controlled PE pipe.

d. Saddle Fusion Joints. Pipe shall conform to the requirements of

ASTM F 905.

2.2.3 Not Used

2.2.4 Ductile-Iron Pipe System

Fittings and specials shall be suitable for 1.03 MPa (150 psi) pressure rating, unless otherwise specified. Fittings and specials for mechanical joint pipe shall conform to AWWA C110. Fittings and specials for use with push-on joint pipe shall conform to AWWA C110 and AWWA C111. Fittings and specials for grooved and shouldered end pipe shall conform to AWWA C606. Fittings and specials shall be cement-mortar lined (standard thickness) in accordance with AWWA C104. Ductile iron compact fittings shall conform to AWWA C153.

2.2.5 Not Used

2.2.6 Dielectric Fittings

Dielectric fittings shall be installed between threaded ferrous and nonferrous metallic pipe, fittings and valves, except where corporation stops join mains. Dielectric fittings shall prevent metal-to-metal contact of dissimilar metallic piping elements and shall be suitable for the required working pressure.

2.3 JOINTS

2.3.1 Not Used

2.3.2 Plastic Pipe Jointing

2.3.2.1 PE Pipe

Joints for pipe fittings and couplings shall be strong tight joints as specified for PE in Paragraph INSTALLATION. Joints connecting pipe of differing materials shall be made in accordance with the manufacturer's recommendation, and as approved by the Contracting Officer.

2.3.2.2 HDPE Pipe

Joints, fittings, and couplings shall be as specified for HDPE pipe. Joints connecting pipe of differing materials shall use mechanical joints (MJ) with flange adapters and metal back-up flanges and shall be made in accordance with the manufacturer's recommendations, and as approved by the Contracting Officer.

2.3.3 Not Used

Joints shall be bell and spigot gasket coupling utilizing an elastomeric gasket in accordance with ASTM D 4161.

2.3.4 Not Used

2.3.5 Ductile-Iron Pipe Jointing

- a. Mechanical joints shall be of the stuffing box type and shall conform to AWWA C111.
- b. Push-on joints shall conform to AWWA C111.

- c. Rubber gaskets and lubricants shall conform to the applicable requirements of AWWA C111.

2.3.6 Not Used

2.3.7 Bonded Joints

For all ferrous pipe, a metallic bond shall be provided at each joint, including joints made with flexible couplings, caulking, or rubber gaskets, of ferrous metallic piping to effect continuous conductivity. The bond wire shall be Size 1/0 copper conductor suitable for direct burial shaped to stand clear of the joint. The bond shall be of the thermal weld type.

2.3.8 Isolation Joints

Isolation joints shall be installed between nonthreaded ferrous and nonferrous metallic pipe, fittings and valves. Isolation joints shall consist of a sandwich-type flange isolation gasket of the dielectric type, isolation washers, and isolation sleeves for flange bolts. Isolation gaskets shall be full faced with outside diameter equal to the flange outside diameter. Bolt isolation sleeves shall be full length. Units shall be of a shape to prevent metal-to-metal contact of dissimilar metallic piping elements.

- a. Sleeve-type couplings shall be used for joining plain end pipe sections. The two couplings shall consist of one steel middle ring, two steel followers, two gaskets, and the necessary steel bolts and nuts to compress the gaskets.
- b. Split-sleeve type couplings may be used in aboveground installations when approved in special situations and shall consist of gaskets and a housing in two or more sections with the necessary bolts and nuts.

2.4 VALVES

2.4.1 Not Used

2.4.2 Gate Valves

Gate valves shall be designed for a working pressure of not less than 1.03 MPa (150 psi). Valve connections shall be as required for the piping in which they are installed. Valves shall have a clear waterway equal to the full nominal diameter of the valve, and shall be opened by turning counterclockwise. The operating nut or wheel shall have an arrow, cast in the metal, indicating the direction of opening.

- a. Valves smaller than 80 mm (3 inches) shall be all bronze and shall conform to MSS SP-80, Type 1, Class 150.
- b. Valves 80 mm (3 inches) and larger shall be iron body, bronze mounted, and shall conform to AWWA C500. Flanges shall not be buried. An approved pit shall be provided for all flanged connections.
- c. Resilient-Seated Gate Valves: For valves 80 to 300 mm (3 to 12 inches) in size, resilient-seated gate valves shall conform to AWWA C509.

- 2.4.3 Not Used
- 2.4.4 Not Used
- 2.4.5 Not Used

2.4.6 Indicator Post for Valves

Each valve shown on the drawings with the designation "P.I.V." or "F.P.I.V." shall be equipped with indicator post conforming to the requirements of NFPA 24. Operation shall be by a wrench which shall be attached to each post. Contractor shall coordinate with the Contracting Officer the color of the P.I.V. located on water lines not designated as a dedicated fire protection line. The color used for the water service P.I.V. shall be different from the F.P.I.V. located on dedicated fire lines.

2.5 VALVE BOXES

Valve boxes shall be cast iron or concrete, except that concrete boxes may be installed only in locations not subjected to vehicular traffic. Cast-iron boxes shall be extension type with slide-type adjustment and with flared base. The minimum thickness of metal shall be 5 mm. Concrete boxes shall be the standard product of a manufacturer of precast concrete equipment. The word "WATER" shall be cast in the cover. The box length shall adapt, without full extension, to the depth of cover required over the pipe at the valve location.

2.6 Not Used

2.7 FIRE HYDRANTS

Hydrants shall be dry-barrel type conforming to AWWA C502 with valve opening at least 125 mm (5 inches) in diameter and designed so that the flange at the main valve seat can be removed with the main valve seat apparatus remaining intact, closed and reasonably tight against leakage and with a breakable valve rod coupling and breakable flange connections located no more than 200 mm (8 inches) above the ground grade. Hydrants shall have a 150 mm (6 inch) bell connection, two 65 mm (2-1/2 inch) hose connections and one 115 mm (4-1/2 inch) pumper connection. Outlets shall have American National Standard fire-hose coupling threads. Working parts shall be bronze. Design, material, and workmanship shall be equal to the latest stock pattern ordinarily produced by the manufacturer. Hydrants shall be painted with 1 coat of red iron oxide, zinc oxide primer conforming to SSPC Paint 25 and 2 finish coats of silicone alkyd paint conforming to SSPC Paint 21, of the installation's standard colors or as directed by the Contracting Officer.

2.8 MISCELLANEOUS ITEMS

2.8.1 Service Clamps

Service clamps shall have a pressure rating not less than that of the pipe to be connected and shall be either the single or double flattened strap type. Clamps shall have a galvanized malleable-iron body with cadmium plated straps and nuts. Clamps shall have a rubber gasket cemented to the body.

2.8.2 Corporation Stops

Corporation stops shall have standard corporation stop thread conforming to

AWWA C800 on the inlet end, with flanged joints, compression pattern flared tube couplings, or wiped joints for connections to goosenecks.

2.8.3 Not Used

2.8.4 Service Stops

Service stops shall be water-works inverted-ground-key type, oval or round flow way, tee handle, without drain. Pipe connections shall be suitable for the type of service pipe used. All parts shall be of bronze with female iron-pipe-size connections or compression-pattern flared tube couplings, and shall be designed for a hydrostatic test pressure not less than 1.375 MPa (200 psi).

2.8.5 Tapping Sleeves

Tapping sleeves of the sizes indicated for connection to existing main shall be the cast gray, ductile, or malleable iron, split-sleeve type with flanged or grooved outlet, and with bolts, follower rings and gaskets on each end of the sleeve. Construction shall be suitable for a maximum working pressure of 1.03 MPa. Bolts shall have square heads and hexagonal nuts. Longitudinal gaskets and mechanical joints with gaskets shall be as recommended by the manufacturer of the sleeve. When using grooved mechanical tee, it shall consist of an upper housing with full locating collar for rigid positioning which engages a machine-cut hole in pipe, encasing an elastomeric gasket which conforms to the pipe outside diameter around the hole and a lower housing with positioning lugs, secured together during assembly by nuts and bolts as specified, pretorqued to 67.8 Newton meters (50 foot-pound).

2.8.6 Service Boxes

Service boxes shall be cast iron or concrete and shall be extension service boxes of the length required for the depth of the line, with either screw or slide-type adjustment. The boxes shall have housings of sufficient size to completely cover the service stop or valve and shall be complete with identifying covers.

2.8.7 Disinfection

Chlorinating materials shall conform to the following:

Chlorine, Liquid: AWWA B301.

Hypochlorite, Calcium and Sodium: AWWA B300.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Cutting of Pipe

Cutting of pipe shall be done in a neat and workmanlike manner without damage to the pipe. Unless otherwise recommended by the manufacturer and authorized by the Contracting Officer, cutting shall be done with an approved type mechanical cutter. Wheel cutter shall be used when practicable. Squeeze type mechanical cutters shall not be used for ductile iron.

3.1.2 Adjacent Facilities

3.1.2.1 Sewer Lines

Where the location of the water pipe is not clearly defined in dimensions on the drawings, the water pipe shall not be laid closer horizontally than 3 m from a sewer except where the bottom of the water pipe will be at least 300 mm above the top of the sewer pipe, in which case the water pipe shall not be laid closer horizontally than 1.8 m from the sewer. Where water lines cross under gravity-flow sewer lines, the sewer pipe, for a distance of at least 3 m each side of the crossing, shall be fully encased in concrete or shall be made of pressure pipe with no joint located within 900 mm horizontally of the crossing. Water lines shall in all cases cross above sewage force mains or inverted siphons and shall be not less than 600 mm above the sewer main. Joints in the sewer main, closer horizontally than 900 mm to the crossing, shall be encased in concrete.

3.1.2.2 Water Lines

Water lines shall not be laid in the same trench with sewer lines, gas lines, fuel lines, or electric wiring.

3.1.2.3 Not Used

3.1.2.4 Not Used

3.1.2.5 Casing Pipe

Water pipe shall be encased in a sleeve of rigid conduit for the lengths shown. Sleeves under railroads shall be in accordance with the UNION PACIFIC and Mason and Hangar Safety Office railroad company requirements. Where sleeves are required, in all other cases, the pipe sleeve shall be steel, manufactured in accordance with AWWA C200, ASTM A 36/A 36M, with a minimum wall thickness of 6.35 mm (0.25 in). A minimum clearance of at least 50 mm or shown on sheet U4.02 between the inner wall of the sleeve and the maximum outside diameter of the sleeved pipe and joints shall be provided. Sand bedding or suitable pipe support shall be provided for the water pipe through the sleeve. Sleeves of ferrous material shall be provided with corrosion protection as required in Section 13110 CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE).

3.1.2.6 Structures

Where water pipe is required to be installed within 1 m of existing structures, the water pipe shall be sleeved as required in Paragraph "Casing Pipe". The Contractor shall install the water pipe and sleeve ensuring that there will be no damage to the structures and no settlement or movement of foundations or footings.

3.1.3 Joint Deflection

3.1.3.1 Not Used

3.1.3.2 Offset for Flexible Plastic Pipe

Maximum offset in alignment between adjacent pipe joints shall be as recommended by the manufacturer and approved by the Contracting Officer, but shall not exceed 5 degrees.

3.1.3.3 Allowable for Ductile-Iron Pipe

The maximum allowable deflection shall be as given in AWWA C600. If the alignment requires deflection in excess of the above limitations, special bends or a sufficient number of shorter lengths of pipe shall be furnished to provide angular deflections within the limit set forth.

3.1.4 Placing and Laying

3.1.4.1 Horizontal Directional Drilling

Placing and laying water pipe using Horizontal Directional Drilling shall be in accordance with the applicable provisions of Section 02540 MINI-HORIZONTAL DIRECTIONAL DRILLING and in accordance with the drawings. The new water line at Line 3A shall be installed using Horizontal Directional Drilling, except when it crosses the railroad track or at the small pits where the water line changes direction.

3.1.4.2 Open Trench

Open Trench shall be done at the excavation pits where the water line changes direction or pipe fittings connections. Pipe and accessories shall be carefully lowered into the trench by means of derrick, ropes, belt slings, or other authorized equipment. Water-line materials shall not be dropped or dumped into the trench. Abrasion of the pipe coating shall be avoided. Except where necessary in making connections with other lines or as authorized by the Contracting Officer, pipe shall be laid with the bells facing in the direction of laying. The full length of each section of pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate bells, couplings, and joints. Pipe that has the grade or joint disturbed after laying shall be taken up and relaid. Pipe shall not be laid in water or when trench conditions are unsuitable for the work. Water shall be kept out of the trench until joints are complete. When work is not in progress, open ends of pipe, fittings, and valves shall be securely closed so that no trench water, earth, or other substance will enter the pipes or fittings. Where any part of the coating or lining is damaged, the repair shall be made by and at the Contractor's expense in a satisfactory manner. Pipe ends left for future connections shall be valved, plugged, or capped, and anchored, as shown.

3.1.4.3 Not Used

3.1.4.4 Plastic Pipe Installation

HDPE and PE Pipe shall be installed in accordance with ASTM D 2774 and ASTM F 645.

3.1.4.5 Piping Connections

Where connections are made between new work and existing mains, the connections shall be made by using specials and fittings to suit the actual conditions. When made under pressure, these connections shall be installed using standard methods as approved by the Contracting Officer. Connections to existing asbestos-cement pipe shall be made in accordance with ACPPA Work Practices.

3.1.4.6 Penetrations

Pipe passing through walls of valve pits and structures shall be provided with ductile-iron or Schedule 40 steel wall sleeves. Annular space between

walls and sleeves shall be filled with rich cement mortar. Annular space between pipe and sleeves shall be filled with mastic.

3.1.4.7 Flanged Pipe

Flanged pipe shall only be installed above ground or with the flanges in valve pits.

3.1.5 Jointing

3.1.5.1 Not Used

3.1.5.2 Polyethelene Plastic Pipe Requirements

a. PE Pipe. Jointing shall comply with ASTM D 2657, Technique I-Socket Fusion or Technique II-Butt Fusion.

b. HDPE Pipe Requirements. Jointing shall comply with ASTM D 3261, Butt Heat Fusion Joining or ASTM D 2683, Socket-Type Joining or ASTM D F 1055, Electrofusion Joining.

3.1.5.3 Not Used

3.1.5.4 Not Used

3.1.5.5 Ductile-Iron Pipe Requirements

Mechanical and push-on type joints shall be installed in accordance with AWWA C600 for buried lines or AWWA C606 for grooved and shouldered pipe above ground or in pits.

3.1.5.6 Not Used

3.1.5.7 Not Used

3.1.5.8 Not Used

3.1.5.9 Bonded Joints Requirements

Bonded joints shall be installed in accordance with details specified for joints in paragraph JOINTS.

3.1.5.10 Isolation Joints and Dielectric Fittings

Isolation joints and dielectric fittings shall be installed in accordance with details specified in paragraph JOINTS. Dielectric unions shall be encapsulated in a field-poured coal-tar covering, with at least 3 mm thickness of coal tar over all fitting surfaces.

3.1.5.11 Transition Fittings

Connections between different types of pipe and accessories shall be made with transition fittings approved by the Contracting Officer.

3.1.6 Installation of Service Lines

Service lines shall include the pipeline connecting building piping to water distribution lines. Service line shall be connected to the existing building service inside of building as shown on the drawings. All service stops and valves shall be provided with service boxes as required on the drawings. Service lines shall be constructed in accordance with the following requirements:

3.1.6.1 Service Lines 50 mm (2 Inches) and Smaller

Service lines 50 mm (2 inches) and smaller shall be connected to the main by a directly-tapped corporation stop or by a service clamp. A corporation stop and a copper gooseneck shall be provided with either type of connection. Maximum sizes for directly-tapped corporation stops and for outlets with service clamps shall be as in TABLE I. Where 2 or more gooseneck connections to the main are required for an individual service, such connections shall be made with standard branch connections. The total clear area of the branches shall be at least equal to the clear area of the service which they are to supply.

TABLE I. SIZE OF CORPORATION STOPS AND OUTLET

| Pipe Size mm | Corporation Stops, mm For Ductile-Iron Pipe | Outlets w/Service Clamps, mm Single & Double Strap |
|-----------------|---|--|
| 80 | -- | 25 |
| 100 | 25 | 25 |
| 150 | 32 | 40 |
| 200 | 40 | 50 |
| 250 | 40 | 50 |
| 300 & larger | 50 | 50 |

NOTE:

- a. Service lines 40 mm (1-1/2 inches) and smaller shall have a service stop.
- b. Service lines 50 mm (2 inches) in size shall have a gate valve.

3.1.6.2 Service Lines Larger than 50 mm (2 Inches)

Service lines larger than 50 mm (2 inches) shall be connected to the main by a tapped saddle, tapping sleeve and valve, service clamp or reducing tee, depending on the main diameter and the service line diameter, and shall have a gate valve. Lines 80 mm (3 inches) and larger may use rubber-seated butterfly valves as specified above, or gate valves.

3.1.6.3 Service Lines for Sprinkler Supplies

Water service lines used to supply building sprinkler systems for fire protection shall be connected to the water distribution main in accordance with NFPA 24.

3.1.7 Not Used

3.1.8 Setting of Fire Hydrants, Meters, Valves and Valve Boxes

3.1.8.1 Location of Fire Hydrants

Fire hydrants shall be located and installed as shown. Each hydrant shall be connected to the main with a 150 mm (6 inch) branch line having at least as much cover as the distribution main. Hydrants shall be set plumb with pumper nozzle facing the roadway, with the center of the lowest outlet not less than 450 mm above the finished surrounding grade, and the operating nut not more than 1.2 m above the finished surrounding grade. Fire hydrants designated on the drawings as low profile shall have the lowest outlet not less than 450 mm above the finished surrounding grade, the top of the hydrant not more than 600 mm above the finished surrounding grade. Except where approved otherwise, the backfill around hydrants shall be thoroughly compacted to the finished grade immediately after installation to obtain beneficial use of the hydrant as soon as practicable. The hydrant shall be set upon a slab of concrete not less than 100 mm thick and 400 mm square. Not less than 2 cubic meters of free-draining broken stone or gravel shall be placed around and beneath the waste opening of dry barrel hydrants to ensure drainage.

3.1.8.2 Not Used

3.1.8.3 Location of Valves

After delivery, valves, including those in hydrants, shall be drained to prevent freezing and shall have the interiors cleaned of all foreign matter before installation. Stuffing boxes shall be tightened and hydrants and valves shall be fully opened and fully closed to ensure that all parts are in working condition. Check, pressure reducing, vacuum, and air relief valves shall be installed in valve pits. Valves and valve boxes shall be installed where shown or specified, and shall be set plumb. Valve boxes shall be centered on the valves. Boxes shall be installed over each outside gate valve unless otherwise shown. Where feasible, valves shall be located outside the area of roads and streets. Earth fill shall be tamped around each valve box or pit to a distance of 1.2 m on all sides of the box, or the undisturbed trench face if less than 1.2 m.

3.1.8.4 Location of Service Boxes

Where water lines are located below paved streets having curbs, the boxes shall be installed directly back of the curbs. Where no curbing exists, service boxes shall be installed in accessible locations, beyond the limits of street surfacing, walks and driveways.

3.1.9 Tapped Tees and Crosses

Tapped tees and crosses for future connections shall be installed where shown.

3.1.10 Thrust Restraint

Plugs, caps, tees and bends deflecting 11.25 degrees or more, either vertically or horizontally, on waterlines 100 mm (4 inches) in diameter or larger, and fire hydrants shall be provided with thrust restraints. Valves shall be securely anchored or shall be provided with thrust restraints to prevent movement. Thrust restraints shall be either thrust blocks or, for ductile-iron pipes, restrained joints.

3.1.10.1 Thrust Blocks

Thrust blocking shall be concrete of a mix not leaner than: 1 cement, 2-1/2 sand, 5 gravel; and having a compressive strength of not less than 14

MPa after 28 days. Blocking shall be placed between solid ground and the hydrant or fitting to be anchored. Unless otherwise indicated or directed, the base and thrust bearing sides of thrust blocks shall be poured directly against undisturbed earth. The sides of thrust blocks not subject to thrust may be poured against forms. The area of bearing shall be as shown or as directed. Blocking shall be placed so that the fitting joints will be accessible for repair. Steel rods and clamps, protected by galvanizing or by coating with bituminous paint, shall be used to anchor vertical down bends into gravity thrust blocks.

3.1.10.2 Restrained Joints

For ductile-iron pipe, restrained joints shall be designed by the Contractor or the pipe manufacturer in accordance with DIPRA-Restraint Design.

3.2 HYDROSTATIC TESTS

Where any section of a water line is provided with concrete thrust blocking for fittings or hydrants, the hydrostatic tests shall not be made until at least 5 days after installation of the concrete thrust blocking, unless otherwise approved.

3.2.1 Pressure Test

After the pipe is laid, the joints completed, fire hydrants permanently installed, and the trench partially backfilled leaving the joints exposed for examination, the newly laid piping or any valved section of piping shall, unless otherwise specified, be subjected for 1 hour to a hydrostatic pressure test of 1.38 MPa. Each valve shall be opened and closed several times during the test. Exposed pipe, joints, fittings, hydrants, and valves shall be carefully examined during the partially open trench test. Joints showing visible leakage shall be replaced or remade as necessary. Cracked or defective pipe, joints, fittings, hydrants and valves discovered in consequence of this pressure test shall be removed and replaced with sound material, and the test shall be repeated until the test results are satisfactory. The requirement for the joints to remain exposed for the hydrostatic tests may be waived by the Contracting Officer when one or more of the following conditions is encountered:

- a. Wet or unstable soil conditions in the trench.
- b. Compliance would require maintaining barricades and walkways around and across an open trench in a heavily used area that would require continuous surveillance to assure safe conditions.
- c. Maintaining the trench in an open condition would delay completion of the project.

The Contractor may request a waiver, setting forth in writing the reasons for the request and stating the alternative procedure proposed to comply with the required hydrostatic tests. Backfill placed prior to the tests shall be placed in accordance with the requirements of Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS.

3.2.2 Leakage Test

Leakage test shall be conducted after the pressure tests have been satisfactorily completed. The duration of each leakage test shall be at

least 2 hours, and during the test the water line shall be subjected to not less than 1.38MPa pressure. Leakage is defined as the quantity of water to be supplied into the newly laid pipe, or any valved or approved section, necessary to maintain pressure within 34.5 kPa (5 psi) of the specified leakage test pressure after the pipe has been filled with water and the air expelled. Piping installation will not be accepted if leakage exceeds the allowable leakage which is determined by the following formula:

$$L = 0.0001351ND(P \text{ raised to } 0.5 \text{ power})$$

L = Allowable leakage in gallons per hour

N = Number of joints in the length of pipeline tested

D = Nominal diameter of the pipe in inches

P = Average test pressure during the leakage test, in psi gauge

Should any test of pipe disclose leakage greater than that calculated by the above formula, the defective joints shall be located and repaired until the leakage is within the specified allowance, without additional cost to the Government.

3.2.3 Time for Making Test

Except for joint material setting or where concrete thrust blocks necessitate a 5-day delay, pipelines jointed with rubber gaskets, mechanical or push-on joints, or couplings may be subjected to hydrostatic pressure, inspected, and tested for leakage at any time after partial completion of backfill. Cement-mortar lined pipe may be filled with water as recommended by the manufacturer before being subjected to the pressure test and subsequent leakage test.

3.2.4 Concurrent Hydrostatic Tests

The Contractor may elect to conduct the hydrostatic tests using either or both of the following procedures. Regardless of the sequence of tests employed, the results of pressure tests, leakage tests, and disinfection shall be as specified. Replacement, repair or retesting required shall be accomplished by the Contractor at no additional cost to the Government.

- a. Pressure test and leakage test may be conducted concurrently.
- b. Hydrostatic tests and disinfection may be conducted concurrently, using the water treated for disinfection to accomplish the hydrostatic tests. If water is lost when treated for disinfection and air is admitted to the unit being tested, or if any repair procedure results in contamination of the unit, disinfection shall be reaccomplished.

3.3 BACTERIALDISINFECTION

3.3.1 Bacteriological Disinfection

Before acceptance of potable water operation, each unit of completed waterline shall be disinfected as prescribed by AWWA C651 and as specified.

After pressure tests have been made, the unit to be disinfected shall be thoroughly flushed with water until all entrained dirt and mud have been removed before introducing the chlorinating material. The chlorinating material shall be either liquid chlorine, calcium hypochlorite, or sodium hypochlorite, conforming to paragraph MISCELLANEOUS ITEMS. The chlorinating material shall provide a dosage of not less than 50 ppm and

shall be introduced into the water lines in an approved manner. PE Plastic pipe lines shall be chlorinated using only the above specified chlorinating material in solution. The agent shall not be introduced into the line in a dry solid state. The treated water shall be retained in the pipe long enough to destroy all non-spore forming bacteria. Except where a shorter period is approved, the retention time shall be at least 24 hours and shall produce not less than 25 ppm of free chlorine residual throughout the line at the end of the retention period. Valves on the lines being disinfected shall be opened and closed several times during the contact period. The line shall then be flushed with clean water until the residual chlorine is reduced to less than 1.0 ppm. During the flushing period, each fire hydrant on the line shall be opened and closed several times. From several points in the unit, personnel from the Contractor's commercial laboratory shall take at least 3 water samples from different points, approved by the Contracting Officer, in proper sterilized containers and perform a bacterial examination in accordance with state approved methods. The commercial laboratory shall be certified by the state's approving authority for examination of potable water.] The disinfection shall be repeated until tests indicate the absence of pollution for at least 2 full days. The unit will not be accepted until satisfactory bacteriological results have been obtained.

3.4 CLEANUP

Upon completion of the installation of water lines, and appurtenances, all debris and surplus materials resulting from the work shall be removed.

-- End of Section --

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DIVISION 02 - SITE WORK

SECTION 02540

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05/00

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SECTION 02540

MINI-HORIZONTAL DIRECTIONAL DRILLING
05/00

PART 1 GENERAL

Contractor shall submit a Schedule. Discuss the feasibility of the design with respect to time, depth, tolerances (subdrain lines), excavation, shoring, and dewatering impacts. Contractor shall also submit qualifications of Mini-Horizontal Directional Drilling Contractor and Superintendent.

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|---|
| ASTM D 638M | (1996) Standard Test Method for Tensile Properties of Plastics (Metric) |
| ASTM D 746 | (1998) Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact |
| ASTM D 1238 | (1998) Standard Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer |
| ASTM D 1248 | (1998) Standard Specification for Polyethylene Plastic Extrusion Materials for Wire and Cable |
| ASTM D 1505 | (1998) Standard Test Method for Density of Plastics by the Density-Gradient Technique |
| ASTM D 1693 | (1998) Standard Test Method for Environmental Stress-Cracking of Ethylene Plastics |
| ASTM D 2837 | (1998a) Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials |
| ASTM D 3261 | (1997) Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing |
| ASTM D 3350 | (1999) Standard Specification for Polyethylene Plastic Pipe and Fitting Materials |

| | |
|-------------|---|
| ASTM F 905 | (1996)Standard Practice for Qualification of Polyethylene Saddle Fusion Joints |
| ASTM F 1055 | (1998) Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing |
| ASTM F 1056 | (1997) Standard Specification for Socket Fusion tools for Use in Socket Fusion Joining Polyethylene Pipe or Tubing and Fittings |

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Drawings; G-RE

Shop drawings to include equipment set up locations including dimensions, shoring and bracing, traffic protection, dewatering system, and provisions for worker safety.

Detailed Descriptive Drawings; G-RE

Detailed descriptive drawings of the system and procedures to be employed.

As-Built Drawings; G-ED

Contractor shall provide as-built drawings showing location and depths of alignments.

SD-08 Manufacturer's Instructions

Material Safety and Data Sheets (MSDS); G-RE

Contractor shall provide MSDS for all material on site.

SD-01 Preconstruction Submittals

Schedule; G-RE

Contractor shall submit a Schedule for installing Water Line by Horizontal Directional Drilling to include time for utility verification.

WORK PLAN; G-RE

Two part plan. First part is to delineate what utilities need to be located for depth due to alignment concerns or safety concerns. The second part after verification of the depth of utilities is to provide data to include proposed type and size of equipment, guidance systems and method of grade

and alignment adjustments based on utility depth exploration.

If utilities verification changes the alignments then contractor shall resubmit work plan with modifications.

Working drawings and written procedure describing in detail the proposed method of installation. This will include, but not be limited to, size, capacity and setup requirements of equipment; location and siting of drilling and receiving pits/areas; dewatering if applicable; method of fusion and type of equipment for joining pipe; type of cutting tool head; type of drilling mud and method of monitoring and controlling line and grade. If the Contractor determines that modifications to the method and equipment as stated in the submittal is necessary during construction, the Contractor will submit a Second plan describing such modifications, including the reasons for the modification.

An emergency contingency plan which will provide for the adequate closure of the operation and filling of void space that may develop between the pipe and excavated ground surface following an unanticipated loss and/or potential loss of soil and groundwater along the conduit alignment. The plan shall provide measures that when implemented will adequately grout-fill all un-anticipated voids created between the pipe and the excavation surface in order to prevent any ground surface settlement along the alignment.

The plan shall contain details of grout mix proportions.

The plan should contain details of emergency grout mix proportions if the alignment is abandoned, slump, and design strength, as well as equipment and grouting procedures including specified injection pressures and methods of void filling verification. The plan shall also contain details of verifying, recording and reporting the implementation of the plan. The plan shall include the following:

Layout of perimeter surface construction and drainage control.

Details of lighting, ventilation if required, and electrical systems and their safeguards.

Protection of Existing Storm Drains; G-RE

Provisions for Mud blow out into drain/pavement areas. Provisions for identifying and protecting adjacent utilities and structures.

SD-07 Certificates

QUALIFICATIONS; G-ED

Submit documentation showing two years of guided boring experience for the supervisor and company, linear feet of installation, 10 similar projects showing date, duration of work, location, project owner information, (i.e., name, address, telephone number, contact person). By similar the list should include at least one of the following types of conditions:

diameter of bore 75 millimeters ,100 millimeters , 150 millimeters ,
and 200 millimeters
depth 0.769 meters to 2.462 meters
type of pipe(HDPE,PE)

Similar Site Conditions/Engineering Conditions

Hydrostatic/Pressure Checks; G-RE

Submit Evidence of OSHA certification or license for its site safety representative/ personnel responsible for gas testing. The Contractor's site safety representative shall provide the engineer with a copy of on-site safety practices and an emergency plan in accordance with OSHA requirements prior to start of work.

Accident Prevention Plan; G-RE

See Specification Section 01400 SPECIAL SAFETY REQUIREMENTS and Specification Section 01351 SAFETY, HEALTH, AND EMERGENCY RESPONSE (HTRW/UST) of these specifications for requirements for the Accident Prevention Plan (APP). Ensure that all health and safety protocols related to jacking and boring activities are discussed in the APP, including confined space procedures (if applicable). Work shall be performed in accordance with the requirements of 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and other references as listed herein. Matters of interpretation of the standards shall be submitted to the Contracting Officer for resolution before starting work. Where the regulations conflict, the most stringent requirements shall apply.

1.3 DEFINITIONS

Guided Boring or Mini-Horizontal Directional Drilling is a method of trenchless construction using a surface launched steerable drilling tool controlled from a mobile drilling frame, and includes a field power unit, mud mixing system and mobile spoils extraction system. This method also called Mini-Horizontal Directional Drilling.

1.4 SCOPE

This specification addresses the installation of 75 millimeters, 100 millimeters, 150 millimeters, and 200 millimeters HDPE Water lines by guided directional drilling. The Contractor will furnish all labor, components, materials, tools and appurtenances necessary or proper for the performance and completion of the contract. The Contractor shall install the HDPE Lineto be an Water Distribution System per Specification 02510.

1.5 GENERAL DSCRIPTION OF THE METHOD

Guided boring is a method of trenchless construction using a surface launched steerable drilling tool controlled from a mobile drilling frame, and includes a field power unit, mud mixing system and mobile spoils extraction system. The drilling frame differs from micro-tunneling, auger boring or pipe jacking equipment in that operations are performed from the surface; large pits to place and align equipment are not necessary. The drilling frame is sited and aligned to bore a pilot tunnel that conforms to the planned line and grade of the Water Line. The drilling frame is set back from an access pit that has been dug at the location of a proposed manhole (or other appurtenance) and a high-pressure fluid jet toolhead that uses a mixture of bentonite clay and water is launched and guided to the correct invert elevation and line required. Using a real-time guidance system attached behind or within the toolhead, and which measures inclination, role and azimuth, the toolhead is guided through the soil to create a pilot tunnel. Tunneling may also be performed from outside of a building to a pit in the floor of a building. Upon reaching the pit dug at

the connecting intersection of the Waterline the toolhead is removed and a reamer with the product pipe and locating wire attached is joined to the drill string and pulled back through the tunnel. A vacuum spoils extraction system removes any excess spoils generated during the installation. After installing the water line the surface is restored to original condition.

1.6 QUALIFICATIONS

Contractor shall submit the following qualifications.

1.6.1 Contractors Experience

Submit documentation showing two years of guided boring experience with at least 100,000 feet of guided boring installations to include a list of a minimum of 10 projects similar in scope (length of drilling, type of soil conditions, type of pipe, diameter of pipe and depth) and value to the project specified in the contract documents. Contractor shall submit with proposal.

Information must include, but not be limited to, date, location, pipe information (i.e., length, diameter, pipe material), project owner information, (i.e., name, address, telephone number, contact person).

1.6.2 Qualifications Supervisors

Submit a list of field supervisory personnel and their experience with guided boring operations. At least one of the field supervisors listed must be at the site and be responsible for all work at all times when guided boring operations are in progress. Guided boring operations will not proceed until the resume(s) of the Contractor's field supervisory personnel have been received and reviewed by the Contracting Officer.

1.6.3 Qualifications Safety Personnel

Provide qualifications of Safety personnel. Evidence of OSHA certification or license for its site safety representative/personnel responsible for gas testing. The Contractor's site safety representative shall provide the engineer with a copy of on-site safety practices and an emergency plan in accordance with OSHA requirements prior to start of work.

1.7 WORK PLAN

Contractor shall provide the following drawings and procedure describing in detail the proposed method of installation. This will include, but not be limited to, size, capacity and setup requirements of equipment; location and sitting of drilling and receiving pits/areas if needed; dewatering if applicable; method of fusion and type of equipment for joining pipe; type of cutting tool head; type of drilling mud and method of monitoring and controlling line and grade. If the Contractor determines that modifications to the method and equipment as stated in the submittal is necessary during construction, the Contractor will submit a plan describing such modifications, including the reasons for the modification.

1.8 PROTECTION OF EXISTING PROPERTY

1.8.1 Protection of Utilities

The Contractor shall specifically address as part of the submittal the

depth or clearance distance between the underground utilities and drilling alignment with respect to the possible mud blowout and damage to utilities. Contractor shall take depth readings by meter to verify his alignment every 3.05 meters along the pipe centerline or 0.610 meters , before every utility crossing to assist in making the tolerances shown. Horizontal and vertical control shall be established and approved by the contracting officer.

1.8.2 Protection of Pavement, Existing Utilities and Drainage Bases

The Contractor shall specifically address as part of the submittal the depth or clearance distance between boring alignments and utilities. Contractor shall take depth readings by meter to verify his alignment every 3.05 meters along the pipe centerline or 0.610 meters , before every Asphalt/Concrete Roads and Sidewalks, crossing to assist in making the tolerances shown.

The contracting officer shall be notified immediately if settlement readings exceed the limits as specified herein. Upon completion of the installation of the carrier pipe all monitoring points shall be recorded once per day for 1 additional day. At the completion of the monitoring period the Contractor shall provide the contracting officer with a report showing the location of all monitoring points and elevation readings. All heave or settlement shall be less than 12.7 millimeters .

1.9 SCHEDULES

The Contractor has the following scheduling constraints:

Contractor shall submit a schedule. The schedule shall include:

Phasing of work to limit down time of utilities to the Production Lines at IAAP

- utility verification
- soil sampling on alignment
- horizontally directional drilling alignment
- chemical sampling (lead and explosives)
- Transportation and Disposal of Soils

1.9 MSDS (Material Safety Data Sheets)

Contractor shall provide MSDS for all material on site. Bentonite drilling mud products information (MSDS); special precautions necessary; method of mixing and application; and method of removing and disposing of spoils.

1.10 SITE CONDITIONS

a. Drilling operations must not interfere with, interrupt or endanger surface and activity upon the surface. Contractor shall reroute traffic around work areas with appropriate signage.

b. Contractor shall excavate/pothole in the grass areas to verify depths before submitting the alignment plan. The contractor shall obtain a digging permit from the American Ordinance for all intrusion work. Contractor shall restore all disturbed areas to the original condition. The water line was assumed to be 1.525 meters to 1.83 meters below the ground surface. The contractor shall maintain a minimum distance of 0.610

meters from other underground Utilities.

c. The primary installation method of the HDPE water line is Horizontal Directional Drilling Specification Section 02540. Boring and Jacking Specification Section 02543 is specified under all Railroad Alignments.

d. The contractor shall install to the lines and grades on the drawings the following alignments:

e. Before submitting the Work Plan the contractor as the minimum shall verify the depths by excavation, direct measurement or by meters for each of the unknown depths along the alignments. Contractor shall notify Contracting Officer to initiate/schedule utility locations three weeks prior to commencement of drilling. Contractor shall coordinate through Contracting Officer for all power shutoff of area lighting if possible.

f. Contractor must comply with all applicable jurisdictional codes and OSHA requirements.

g. When rock stratum, boulders, underground obstructions, or other soil conditions that impede the progress of drilling operations are encountered, the Contractor and Contracting Officer Representative must review the situation and jointly determine the feasibility of continuing drilling operations, making adjustments or switching to an alternative construction method.

h. For excavation and backfill contractor shall follow Specification Section 02316. Drill Cuttings from the Horizontal Directional Drilling shall be disposed per Specification Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS and Specification Section 01450 CHEMICAL DATA QUALITY CONTROL prior to disposal.

1.10.1 Geotechnical Testing and Groundwater

a. Contractor shall sample the soils and classify enough to perform the Horizontal Direction Drilling work along the alignment during the utility verification before updating the work plan. Borings are provided from previous work in the area. Ground water is assumed deeper than 2.13 meters . Ground water shallower than 2.13 meters shall be considered a change in site condition.

b. Ground water varies seasonally and can be within 0.61 meters from the surface due to Artesian Conditions the day after drilling. See the change in Groundwater elevation near Building 3A-05-1 from borings (IA00-23, IA00-24, and IA00-25) as shown on Sheet G1.11. Ground water is assumed deeper than 2.13 meters . Ground water shallower than 2.13 meters shall be considered a change in site condition. If Ground water is encountered, see Specification Section 01355 ENVIRONMENTAL PROTECTION for disposal of Ground Water.

c. The following Groundwater Elevation was taken in November 1999 by Harza Engineering Company. Location of Wells is shown in Appendix A.1 to the Boring and Jacking Specification. Groundwater Monitoring Well Inventory (Module 1) is attached in Appendix A.2 of the Boring and Jacking Specification. For Chemistry Information on RDX, see SPECIFICATION SECTION 01450 CHEMISTRY DATA QUALITY CONTROL.

| Well | | GROUND ELEVATION | GROUND | | WATER ELEVATION | GROUND WATER DEPTH FROM SURFACE |
|--------|-----------|---------------------|---------------------------|-------------------------|--------------------|--|
| | | | TOP OF COLUMN (TOC) | WATER DEPTH (TOC) | | |
| JAW-15 | (Shallow) | 710.68 | 712.88 | 9.4 | 703.48 | 7.20 feet |
| JAW-16 | (Bedrock) | 710.98 | 713.07 | 19.91 | 693.16 | 17.82 feet |
| JAW-17 | (Shallow) | 709.33 | 711.83 | 5.89 | 705.94 | 3.39 feet |
| JAW-18 | (Bedrock) | 709.24 | 711.74 | DRY | 661.74*Bed | 47.50 feet |
| JAW-19 | (Shallow) | 713.23 | 715.77 | DRY | 700.77 | 12.46 feet |
| JAW-20 | (Shallow) | 711.90 | 713.82 | 24.29 | 689.53 | 22.37 feet |
| JAW-21 | (Bedrock) | 711.88 | 714.66 | 8.0 | 706.88 | 5.00 feet |
| JAW-22 | (Shallow) | 711.37 | 713.57 | 14.3 | 697.07 | 16.50 feet |

PART 2 PRODUCTS

2.1 MATERIAL REQUIREMENTS

2.1.1 Pipe Fittings

a. Contractor shall verify all utility unknowns prior to submitting a work plan for Horizontal Directional Drilling. Contractor shall submit type of pipe, fittings, gaskets, calculations/measurements on radius of bending, suitability for intended purpose and drilling mud 30 days prior to starting.

b. Contractor shall place a wire to locate the water line by above ground means without the need to excavate.

c. Contractor shall select drilling diameter of pilot hole to match the 75 millimeters and 100 millimeters building laterals to minimize the disposal quantities for the smaller diameter laterals. Larger Drill Diameter cuttings 150 millimeters and 200 millimeters shall be sampled according to Specification Section 01450 Chemical Sampling. Disposal of Drill Cuttings shall be according to Specification Section 01355 Environmental Protection and Specification Section 02316 Excavation, Trenching, and Backfilling for Utilities Systems.

d. High Density Polyethylene Pipe (HDPE) and fittings will be used in accordance with the material specifications. All additional appurtenances (tees, gaskets, etc.) will meet the material specifications. The Contractor shall select a Waterline (HDPE) that has a wall thickness that can support the earth loads and the installation process. The Contractor will supply the pipe and fitting and will include its price in the bid. All pipe installed by guided boring will be joined by an approved Butt Heat Fusion ASTM D 3261, Saddle Fusion ASTM F 905 or Electrofusion ASTM F 1055 and Socket Fusion ASTM F 1056 technique according to the manufacturers specifications. Contractor shall verify that the HDPE Water Line has compatible radius of bending, and materials are adequate for intended purpose.

e. HDPE pipe shall be produced from resins meeting the requirements of ASTM D 1248. The HDPE Pipe shall meet the minimum requirements of PE, designation PE3408, and ASTM D 3350 cell classification PE345434C. Material taken from HDPE pipe will meet the minimum stability requirements of ASTM D 3350. Pipe will be legibly marked at intervals of no more than five feet with the manufacturer's name, trademark, pipe size, HDPE cell classification, appropriate legend such as ASTM D 3350, date of manufacture and point of origin. Pipe not marked as indicated above will be rejected.

f. HDPE pipe shall have the minimum properties

| Property | Test Method | Value |
|--|--------------------------|-----------------------------|
| Density | ASTM D 1505 | > 0.941 gms/cm ³ |
| Melt Index | ASTM D 1238 | < 0.15 gms/10min |
| Environmental Stress Cracking Resistance Condition A,B,&C,F (molded specimen) | ASTM D 1693 | > 192 hrs. |
| Tensile Strength, Ultimate Type IV Specimen | ASTM D 638M (2"/min.) | Submit Value[psi] |
| Tensile Strength Yield Type IV Specimen | ASTM D 638M (2"/min.) | 3,000 - 3,500 [psi] |
| Elongation at Break Type IV Specimen | ASTM D 638M (2"/min.) | > 500% |
| Brittleness Temperature | ASTM D 746 | < -160 degrees F |
| Flexural Modulus | ASTM D 3350 | > 110,000 psi |
| Modulus of Elasticity (Young's Modulus) | ASTM D 638M | Submit Value [psi] |
| Long Term Strength 73 degrees 140 degrees | ASTM D 2837 | >1,600 psi > 800 psi |
| Material Cell Classification | ASTM D 3350 | 345434C |
| Material Designation | PPI Recommendation | PE3408 |

2.1.2 Drilling Fluid

Drilling fluid will be a mixture of water and bentonite clay. The fluid will be inert. The fluid should remain in the boring to ensure the stability of the tunnel, reduce drag on the pulled pipe, and provide backfill within the annulus of the pipe and tunnel.

PART 3 EXECUTION

3.1 GENERAL INSTALLATION PROCEDURES

The Contractor shall install HDPE pipe on the surface. After the Mini-Horizontal Drill, drills the pilot hole and lubricates the hole with drilling mud, for the 150 millimeters, and 200 millimeters Water Line Alignmentsthe Contractor shall ream out the hole to receive the HDPE Water Line.

3.2 OBSTRUCTIONS

The Contracting Officer must be notified immediately if any obstruction is encountered that stops the forward progress of drilling operations. The Contractor and Contracting Officer must review the situation and jointly determine the feasibility of continuing drilling operations or switching to an alternative construction method. When it is determined that it is impossible to continue drilling operations, the Contractor will be allowed to abandon the completed portion in place, after grouting unless otherwise directed by the Contracting Officer.

3.3 DEWATERING

Dewatering of pits and excavations must meet the general safety provisions. The type of dewatering method will be at the option of the Contractor. When water is encountered, the Contractor must provide a dewatering system of sufficient capacity to remove water, keeping any excavations free of water until the backfill operation is complete. Dewatering will be performed in a manner that suspended soil particles are held to a minimum.

3.4 TOLERANCES

Contractor shall meet the following tolerances for each alignment. All lines shall be at a minimum depth of 1.525 meters below parking lots and grass areas. A minimum of of clearance from other utility alignments and bedding materials. Contractor shall

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SECTION 02563

(IOWA) RIGID, FLEXIBLE AND CRUSHED ROCK PAVEMENTS, AGGREGATE SURFACING, AND
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03/00

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SECTION 02563

(IOWA) RIGID, FLEXIBLE AND CRUSHED ROCK PAVEMENTS, AGGREGATE SURFACING, AND
CONCRETE SIDEWALK

03/00

PART 1 GENERAL

Attachments: Standard Drawing No. 40-17-01, Sheet 6

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO T 96 (1994) Resistance to Degredation of
Small-size Coarse Aggregation Abrasion
and Impact in Los Angeles Machine

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 127 (1988) Specific Gravity and Absorption of
Coarse Aggregate

ASTM C 128 (1997) Specific Gravity and Absorption of
Fine Aggregate

ASTM D 1556 (1990) Density and Unit Weight of Soil in
Place by the Sand-Cone Method

ASTM D 1557 (1991) Laboratory Compaction
Characteristics of Soil Using Modified
Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))

ASTM D 2041 (1995) Theoretical Maximum Specific
Gravity and Density of Bituminous Paving
Mixtures

ASTM D 2950 (1991) Density of Bituminous Concrete In
Place by Nuclear Method

IOWA DEPARTMENT OF TRANSPORTATION (IDOT) .

IDOT Standard Specifications for Highway and
Bridge Construction, 1997 Series and
General Supplemental Specifications for
Construction Projects

CORPS OF ENGINEERS (COE) HAND BOOK FOR CONCRETE AND CEMENT

| | |
|-----------|---|
| CRD-C 171 | (1995) Standard Test Method For Determining Percentage of Crushed Particles in Aggregate |
| CRD-C 649 | (1995) Standard Test Method For Determining Unit Weight, Marshall Stability, and Flow of Bituminous Mixtures |
| CRD-C 650 | (1995) Standard Test Method For Density and Percent Voids in Compacted Bituminous Paving Mixtures |
| CRD-C 652 | (1995) Standard Test Method For Measurement of Reduction in Marshall Stability of Bituminous Mixtures Caused by Immersion in Water |

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-06 Test Reports

Aggregate Moisture-Density Relationships; G-RE.

For Base Courses

Base Course; G-RE.

Aggregate Moisture-Density Relationships

Certified Refinery Analysis; G-RE.

Asphalt Cement, Tack Coat.

Bituminous Surface Course; G-RE.

Include Marshall Property Results.

Aggregate; G-RE.

JMF, Base Courses, Portland Cement Concrete

Portland Cement Concrete; G-RE.

Sidewalk.

Joint Sealant; G-RE.

Sidewalk.

Joint Fillers; G-RE.

Sidewalk

Temperature-viscosity; G-RE.

temperature-viscosity relationship for bituminous prime coat

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 DEFINITION

Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedures presented in ASTM D 1557, "Procedure C". This will be abbreviated hereinafter as percent laboratory maximum density.

3.2 MODIFICATION TO THE IDOT

a. Reference to "Engineer" and "Department" in the IDOT shall mean the Contracting Officer or Representative.

b. Sections "Acceptance", "Method of Measurement" and "Basis of Payment" shall not apply.

3.3 PAVEMENT REMOVAL

Where pavement is to be removed the pavement shall be sawed full depth with an approved concrete saw prior to removal so as to leave a straight, true and vertical edge. The pavement material and underlying courses shall be removed in a manner that will not disturb the adjacent in-place material if it is to remain. Material that is to remain but damaged by the Contractor's removal operations, shall be replaced at no additional cost to the Government as described herein. Base course material removed shall be stockpiled and reused except the top 150 mm. The top 150 mm of base course material shall be scarified and recompact to 100% of the maximum laboratory density. Pavement material from the removal area shall be disposed of off Government controlled land at the Contractor's expense.

3.4 BITUMINOUS SURFACE COURSE

Bituminous Surface Course shall conform to the requirements specified in the IDOT Section 2303, "Asphalt Cement Concrete Mixtures" for materials and construction procedures except as modified herein. Aggregate shall meet the requirements of Section 4127, "Aggregate for Type A Asphalt Cement Concrete". A recycled mixture shall not be used. Combined aggregate shall meet gradation number 25. Coarse Aggregate shall meet the following additional requirements: Crushed stone shall be crushed quarry rock. Gravel if used shall contain a minimum of 75 percent crushed material when tested in accordance with CRD-C 171. Testing of the gravel shall be performed on the individual source of aggregate and not on the combined aggregate after proportioning. Percentage of Loss shall not exceed 18 after 5 cycles when performed in accordance with ASTM C 88, using magnesium sulfate. The quantity of natural sand (fine aggregate) for the surface course mixture shall not exceed 20 percent by weight of coarse and fine

aggregate and material passing the No. 200. Bituminous surface course mixture shall be designed in accordance with CRD-C 649, CRD-C 650, and CRD-C 652. The finished mixture shall meet the requirements hereinafter described when tested in accordance with the above mentioned CRD-C's. The absorption value of the entire blend of aggregate shall be determined in accordance with ASTM C 127 and ASTM C 128. Aggregate with an absorption value which does not exceed 2.5 percent will be designated as nonabsorptive, and the apparent specific gravity or ASTM D 2041, shall be used in computing the voids total mix and voids filled with bitumen. Aggregate with an absorption value which exceeds 2.5 percent will be designated as absorptive, and the bulk-impregnated specific gravity or ASTM D 2041, shall be used in computing voids total mix and voids filled with bitumen. Bulk-impregnated specific gravity shall be determined in accordance with Method 105. The bituminous surface course mixture shall meet the following requirements for stability, flow, and voids:

| Test Property | CRD-C Method | Nonabsorptive Aggregate | Absorptive Aggregate |
|---|-----------------|----------------------------|-------------------------|
| Stability, minimum, kilograms | 649 | 450 | 450 |
| Flow, maximum, 0.25 mm units | 649 | 20 | 20 |
| Voids, total mix, percent | 650 | 3-5 | 2-4 |
| Voids, filled with bitumen, percent (If ASTM D 2041 is used) | 650 | 75-85 70-80 | 80-90 |

3.4.1 Reduction in Stability by Immersion

If the index of retained stability of the specimens is less than 75, when tested in accordance with CRD-C 652, the aggregates shall be rejected or the bitumen shall be treated with an approved antistripping agent. The amount of antistripping agent added to the bitumen shall be sufficient, as approved by the Contracting Officer, to produce an index of retained stability of 75 or greater when tested in accordance with CRD-C 652. No additional payment will be made for any addition of antistripping agent that may be required.

3.4.2 Contractor's Option

At the option of the Contractor, in lieu of developing a new job-mix formula for surface course construction, the Contractor may use a job-mix formula for surface course construction which has been used within the last 12 months on another nearby Corps of Engineers project, provided in each instance that the same materials proposed for use on this project are being used, the JMF meets the previously specified criteria, and the JMF and test results are less than 12 months old. Use of this option will permit no changes to aggregate requirements or to other requirements specified in this section and shall not be the basis for additional cost to the Government or extension of time.

3.5 BITUMINOUS MATERIAL

Approval of bituminous materials shall be based on a certified refinery analysis submitted by the Contractor, showing that the material conforms to the requirements of the IDOT or as specified herein.

3.5.1 Asphalt Cement

Asphalt cement shall conform to the requirements specified in Section 4137

Asphalt Cement of the IDOT. Asphalt cement shall be penetration grade 85-100 or viscosity grade AC-10.

3.5.2 Bituminous Prime Coat

Bituminous prime coat shall conform to and be placed to the requirements specified in Section 2303.02, "Materials," and Section 2303.16, "Priming" of the IDOT. Bituminous materials shall be liquid asphalt, designation MC-30, or MC-70 at the Contractor's option, except that only MC-30 shall be used on dense graded base courses if MC-70 does not adequately penetrate the base course material. Rate of application shall be not less than 0.60 liters nor more than 1.60 liters per square meter. The prime coat shall be applied only when the ambient temperature is 10 degrees centigrade or above, and when the temperature has not been below 2 degrees centigrade for 12 hours immediately prior to application, unless otherwise directed. The exact quantities, within the range specified, which may be varied to suit field conditions, will be determined by the Contracting Officer. The application temperature for liquid asphalt shall be as directed and shall provide an application viscosity between 20 and 120 centistokes, kinematic, or 10 and 60 seconds, Saybolt-Furol. Application temperatures shall be within the following ranges, except that the appropriate changes should be made when the range of viscosity is raised or lowered:

| | |
|------------|------------------|
| MC-30..... | 30-68 degrees C. |
| MC-70..... | 49-88 degrees C. |

The temperature-viscosity relationship shall be furnished to the Contracting Officer.

3.5.3 Bituminous Tack Coat

Bituminous tack coat shall conform to the requirements specified in section 2303.02, "Materials" of the IDOT.

3.6 BASE COURSES

The Base Course shall conform to and be placed in accordance with the requirements specified in Section 2111 "Granular Subbase". At the option of the contractor, existing base course material to be removed or commercially available recycled portland cement concrete (pcc) may be used in areas as shown on the drawings for new subbase or rigid base course material provided the existing base course material meets the physical requirements as stated below in paragraph: Subbase Course or paragraph Rigid Base Course. Reclaimed asphalt pavement (RAP) from areas to be removed within the project site or commercially available recycled portland cement concrete (pcc) may also be used for new subbase construction provided the RAP material or the recycled pcc conforms to the requirements as stated below in paragraph: Subbase Course.

3.6.1 Aggregate Base Course

Aggregate for this base course shall be crushed quarry rock and shall meet the requirements for gradation No. 24 in Section 4109 of the IDOT. The aggregate shall conform to the physical properties in Section 4126.01 of IDOT. The percentage passing the No. 200 sieve shall not exceed 10. Testing shall be as necessary to demonstrate complete compliance with the requirements of the IDOT specifications and as specified herein. At least one complete series of Aggregate Base Course tests shall be performed prior to the start of construction.

3.6.2 SUBBASE COURSE

Subbase/rigid base course shall conform to Section 4121, "Granular Subbase Material". Aggregate shall be crushed quarry rock, gravel, or a combination thereof and shall conform to the requirements for gradation No. 12 of the IDOT. Gravel shall contain a minimum of 75 percent crushed particles when tested in accordance to CRD-C 171. The percentage passing the No. 200 sieve shall not exceed 15 percent. Subbase/Rigid Base Course Aggregate* shall have a percentage of wear not to exceed 50 percent when tested in accordance with AASHTO T 96. Testing shall be as necessary to demonstrate complete compliance with the requirements of the IDOT specifications and as specified herein. At least one complete series of aggregate tests shall be performed prior to the start of construction. Prior to placement of the subbase/rigid base material the subgrade shall be prepared and approved .

3.7 PORTLAND CEMENT CONCRETE SIDEWALKS,

3.7.1 Sidewalks

Portland Cement Concrete sidewalk shall conform to and be placed in accordance with the requirements specified in Section 2511, "Removal and Construction of Portland Cement sidewalks, except as modified herein. The portland cement concrete shall be Class C-L4 WR - C(or F)15 and the proportioning shall be C-2 or C-3WR. At the option of the contractor, the portland cement concrete as required in paragraph 3.6 herein may be used. The Aggregate shall conform to gradation number 3, or 5 in Section 4109 of the IDOT. The sidewalk shall be constructed to the dimensions as shown in the attached Standard Drawing No. 40-17-01, Sheet 6 for new construction. Replacement sidewalk shall match existing sidewalk or as directed by the Contracting Officer. Joint Fillers and Joint Sealant shall be approved based on certified test results conforming to Section 4136 "Joint Fillers and Sealers". The joint sealant shall be either a hot pour or a silicone and placed in accordance to Section 2301.25 "Sealing Joints" in the IDOT. At the end of the curing period, expansion and contraction joints shall be carefully cleaned and filled with joint sealer. Joints shall be filled with sealer and recessed from the concrete surface 3 mm and in such manner as to minimize spilling on the adjacent surface. Spilled sealing material shall be removed immediately and the surface of the sidewalk cleaned.

3.8 AGGREGATE SURFACING

Aggregate surfacing shall conform to the requirements specified in Section 2312 "Granular Surfacing" and Section 4120 "Granular Surfacing Material," Class C Gravel, Gradation No. 10.

3.9 SAMPLING AND TESTING

All quality control sampling and testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government in accordance with Section 01451A CONTRACTOR QUALITY CONTROL and as specified herein. Sampling and testing shall be performed by an approved testing laboratory at the expense of the Contractor and shall be in accordance as defined herein or in the IDOT. At least 15 working days prior to commencing construction, the Contractor shall submit for approval the aggregate base course tests results, the job mix formula plus Marshall and aggregate tests results, portland cement concrete mix designs for the sidewalk showing that all requirements specified herein and in the IDOT are

met.

3.9.1 In-Place Tests

3.9.1.1 Base Courses

One of each of the following tests shall be performed on samples taken from the placed and compacted base courses. Samples shall be taken for each 1000 square meters or less of each layer placed.

Sieve Analysis

Field Density and Moisture

Liquid-Limit and Plasticity-Index

3.9.2 Compaction

3.9.2.1 Base Courses

Laboratory maximum density of aggregate base courses shall be determined in accordance with ASTM D 1557 Method C. Density shall be measured in the field in accordance with ASTM D 1556. All base courses shall be compacted to at least 100 percent of laboratory maximum density.

3.9.2.2 Bituminous Surface Course

Density of the compacted mixture of the surface course shall be within the range of 97% and 100% (95%-100% along joints) of the maximum field laboratory compacted density. At the option of the Contractor densities of the compacted mixture may be determined by the nuclear method in accordance with ASTM D 2950 for contractor quality control purposes. In any event, the basis of acceptance for density shall be determined from the specific gravity method as stated below.

3.9.3 Portland Cement Concrete

One of each of the following tests shall be performed on samples taken at the location of placement. Samples shall be taken at every two hours during the actual placement of concrete or as directed by the Contracting Officer.

PCC (Portland Cement Concrete) air content and slump

PCC cylinders (Cast three specimens for testing at 28 days)

3.9.4 Bituminous Mixtures

Samples of plant mixtures shall be taken at the start-up of the laydown operations each day and before the material is placed in the pavement. The sample shall be tested to determine conformance with the specified Marshall test properties for bituminous mixtures and to determine bitumen content and aggregate gradation.

3.9.4.1 Testing Frequency

a. Marshall Tests

One set (three specimens) of tests shall be made for each 275 metric tons or less of bituminous mixture placed each day.

b. Extraction Tests

Extraction tests shall be made to determine bitumen content and aggregate gradation at the same frequency specified above for Marshall tests.

c. Immersion Compression Tests

One set of tests shall be made for the first day's construction and thereafter whenever there is any change in materials or job-mix formula.

3.9.4.2 Sampling Bituminous Pavements

Testing and sampling of the finished pavement, shall be performed by the Contractor. The location of the core samples shall be near the plant samples taken for Marshall property determination, extraction and gradation or as directed by the Contracting Officer. The cores shall be at least 100 mm in diameter. The samples shall be tested by the Contractor to determine conformance to density, voids and thickness. Specimens shall be tested in accordance with the requirements of CRD-C 650. Three samples shall be taken and tested for each 275 metric tons or less of bituminous mixture placed each day. At least one sample shall be taken from the longitudinal joint. The grade of the completed surface shall not deviate more than 15 mm from the plan grade. The finished surface when tested with a 3.66 meter straight edge shall not deviate from the surface by more than 6 mm. The straight edge shall be laid every 7.62 meters parallel and perpendicular to the paving lane centerline.

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SECTION 02921

SEEDING
06/98

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AGRICULTURAL MARKETING SERVICE (AMS)

AMS-01 (Aug 95) Federal Seed Act Regulations Part
201

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 5268 (1992; R 1996) Topsoil Used for
Landscaping Purposes

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment; . Surface Erosion Control Material; . Chemical Treatment Material; G-RE.

Manufacturer's literature including physical characteristics, application and installation instructions for equipment, surface erosion control material and chemical treatment material.

Equipment; .

A listing of equipment to be used for the seeding operation.

Delivery; .

Delivery schedule.

Finished Grade and Topsoil; .

Finished grade status.

Topsoil; .

Availability of topsoil from the stripping and stock piling operation.

Quantity Check;

Bag count or bulk weight measurements of material used compared with area covered to determine the application rate and quantity installed.

Seed Establishment Period; .

Calendar time period for the seed establishment period. When there is more than one seed establishment period, the boundaries of the seeded area covered for each period shall be described.

Maintenance Record; .

Maintenance work performed, area repaired or reinstalled, diagnosis for unsatisfactory stand of grass plants.

Application of Pesticide; G-RE.

Pesticide treatment plan with sequence of treatment work with dates and times. The pesticide trade name, EPA registration number, chemical composition, formulation, concentration of original and diluted material, application rate of active ingredients, method of application, area treated, amount applied; and the name and state license number of the state certified applicator shall be included.

SD-06 Test Reports

Equipment Calibration; .

Certification of calibration tests conducted on the equipment used in the seeding operation.

SD-07 Certificates

Seed; G-RE.

Topsoil; .

Fertilizer; .

Organic Material; .

Soil Conditioner; .

Mulch; .

Pesticide; G-RE.

Prior to the delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following:

- a. Seed. Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.
- b. Topsoil. Particle size, pH, organic matter content, textural class, soluble salts, chemical and mechanical analyses.
- c. Fertilizer. Chemical analysis and composition percent.
- d. Organic Material: Composition and source.
- e. Soil Conditioner: Composition and source.

f. Mulch: Composition and source.

g. Pesticide. EPA registration number and registered uses.

SD-04 Samples

Delivered Topsoil; .

Samples taken from several locations at the source.

Soil Amendments; .

A 4.5 kilogram sample.

Mulch; .

A 4.5 kilogram sample.

1.3 SOURCE INSPECTION

The source of delivered topsoil shall be subject to inspection.

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.4.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

1.4.1.1 Delivered Topsoil

Prior to the delivery of any topsoil, its availability shall be verified in paragraph TOPSOIL.

1.4.1.2 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.4.1.3 Pesticides

Pesticide material shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses.

1.4.2 Inspection

Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected. Other materials shall be inspected for compliance with specified requirements. The following shall be rejected: open soil amendment containers or wet soil amendments; topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 40 mm diameter; and topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the job site.

1.4.3 Storage

Materials shall be stored in designated areas. Seed and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with seeding operation materials.

1.4.4 Handling

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles.

1.4.5 Time Limitation

Hydroseeding time limitation for holding seed in the slurry shall be a maximum 24 hours.

PART 2 PRODUCTS

2.1 SEED

2.1.1 Seed Classification

State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS-01 and applicable state seed laws.

2.1.2 Permanent Seed Species and Mixtures

Permanent seed species and mixtures shall be proportioned by weight as follows:

| Species | Kg/100meters Square | Pounds per acre |
|--------------------|---------------------|-----------------|
| K-31 Fescue | 50 | 100 |
| Redtop | 20 | 40 |
| Perennial Ryegrass | 20 | 40 |

2.1.3 Temporary Seed Species

Temporary seed species for surface erosion control or overseeding shall be as follows: Annual Ryegrass

2.1.4 Quality

Weed seed shall be a maximum 1 percent by weight of the total mixture.

2.1.5 Seed Mixing

The mixing of seed may be done by the seed supplier prior to delivery, or on site as directed.

2.1.6 Substitutions

Substitutions will not be allowed without written request and approval from the Contracting Officer.

2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. When available, the topsoil shall be the existing surface soil stripped and stockpiled onsite. When additional topsoil is required beyond the available topsoil from the stripping operation, topsoil shall be delivered and amended as needed. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 40 mm diameter. Topsoil shall be free from viable plants and plant parts.

2.3 SOIL AMENDMENTS

Soil amendments shall consist of fertilizer, organic material and soil conditioners meeting the following requirements. Vermiculite shall not be used.

2.3.1 Fertilizer

The nutrient ratio shall be 20 percent Nitrogen, 10 percent Phosphorous, 5 percent Potassium. Fertilizer shall be controlled release commercial grade, free flowing, uniform in composition, and consist of a nitrogen-phosphorus-potassium ratio. The fertilizer shall be derived from sulphur coated urea, urea formaldehyde, plastic or polymer coated pills, or isobutylenediurea (IBDU). Fertilizer shall be balanced with the inclusion of trace minerals and micro-nutrients.

2.3.2 Organic Material

Organic material shall consist of either rotted manure, decomposed wood derivatives, recycled compost.

2.3.2.1 Rotted Manure

Rotted manure shall be unleached horse, chicken or cattle manure containing a maximum 25 percent by volume of straw, sawdust, or other bedding materials. It shall contain no chemicals or ingredients harmful to plants. The manure shall be heat treated to kill weed seeds and be free of stones, sticks, and soil.

2.3.2.2 Decomposed Wood Derivatives

Decomposed wood derivatives shall be ground bark, sawdust, yard trimmings, or other wood waste material that is free of stones, sticks, soil, and toxic substances harmful to plants, and is fully composted or stabilized with nitrogen.

2.3.2.3 Recycled Compost

Compost shall be a well decomposed, stable, weed free organic matter source. Compost shall be derived from food; agricultural or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated or mixed solid waste. The compost shall possess no objectionable odors and shall not resemble the raw material from which it was derived. The material shall not contain substances toxic to plants. Gradation: The compost material shall pass through a 10 mm screen, possess a pH of 5.5 to 8.0, and have a moisture content between 35-55 percent by weight. The material shall not contain more than 1 percent by weight of man-made foreign matter. Compost shall be cleaned of plastic materials larger than 50 mm in length.

2.3.3 Soil Conditioner

Soil conditioner shall be super absorbent polymers.

2.3.3.1 Super Absorbent Polymers

To improve water retention in soils, super absorbent polymers shall be sized and applied according to the manufacturer's recommendations. Polymers shall be added as a soil amendment and be cross-linked polyacrylamide, with an absorption capacity of 250-400 times its weight. Polymers shall also be added to the seed and be a starch grafted polyacrylonitrile, with graphite added as a tacky sticker. It shall have an absorption capacity of 100 plus times its weight.

2.4 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.4.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.4.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

2.4.3 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 4.5 to 6.0.

2.5 WATER

Water shall be the responsibility of the Contractor, unless otherwise noted. Water shall not contain elements toxic to plant life.

2.6 PESTICIDE

Pesticide shall be insecticide, herbicide, fungicide, nematocide, rodenticide or miticide. For the purpose of this specification, a soil fumigant shall have the same requirements as a pesticide. The pesticide material shall be EPA registered and approved.

2.7 SURFACE EROSION CONTROL MATERIAL

Surface erosion control material shall conform to the following:

2.7.1 Surface Erosion Control Blanket

Blanket shall be machine produced mat of wood excelsior formed from a web of interlocking wood fibers; covered on one side with either knitted straw

blanket-like mat construction; covered with degradable plastic mesh; or interwoven degradable thread, plastic netting.

2.7.2 Erosion Control Material Anchors

Erosion control anchors shall be as recommended by the manufacturer.

PART 3 EXECUTION

3.1 INSTALLING SEED TIME AND CONDITIONS

3.1.1 Seeding Time

Seed shall be installed from April 1 to May 15 for spring establishment; and from August 1 to September 30 for fall establishment.

3.1.2 Seeding Conditions

Seeding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed.

When special conditions warrant a variance to the seeding operations, proposed alternate times shall be submitted for approval.

3.1.3 Equipment Calibration

Immediately prior to the commencement of seeding operations, calibration tests shall be conducted on the equipment to be used. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified criteria. The equipment shall be calibrated a minimum of once every day during the operation. The calibration test results shall be provided within 1 week of testing.

3.2 SITE PREPARATION

3.2.1 Finished Grade and Topsoil

The Contractor shall verify that finished grades are as indicated on drawings, and the placing of topsoil, smooth grading, and compaction requirements have been completed in accordance with Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS, prior to the commencement of the seeding operation.

3.2.2 Application of Soil Amendments

3.2.2.1 Applying Fertilizer

Fertilizer shall be applied at the rate of no less than 0.454 kilograms of actual nitrogen per 100 square meters (1 lb of actual nitrogen per 1,000 square feet). Fertilizer shall be incorporated into the soil to a maximum 100 mm depth or may be incorporated as part of the tillage or hydroseeding operation.

3.2.2.2 Applying Soil Conditioner

The soil conditioner shall be spread uniformly over the soil a minimum 25 mm depth and thoroughly incorporated by tillage into the soil to a maximum 100 mm depth.

3.2.2.3 Applying Super Absorbent Polymers

Polymers shall be spread uniformly over the soil as recommended by the manufacturer and thoroughly incorporated by tillage into the soil to a maximum 100 mm depth.

3.2.3 Tillage

Soil on slopes up to a maximum 3-horizontal-to-1-vertical shall be tilled to a minimum 100 mm depth. On slopes between 3-horizontal-to-1-vertical and 1-horizontal-to-1 vertical, the soil shall be tilled to a minimum 50 mm depth by scarifying with heavy rakes, or other method. Rototillers shall be used where soil conditions and length of slope permit. On slopes 1-horizontal-to-1 vertical and steeper, no tillage is required. Drainage patterns shall be maintained as indicated on drawings. Areas compacted by construction operations shall be completely pulverized by tillage. Soil used for repair of surface erosion or grade deficiencies shall conform to topsoil requirements. The pH adjuster, fertilizer, and soil conditioner may be applied during this procedure.

3.2.4 Prepared Surface

3.2.4.1 Preparation

The prepared surface shall be a maximum 25 mm below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas. The prepared surface shall be completed with a light raking to remove debris.

3.2.4.2 Lawn Area Debris

Debris and stones over a minimum 16 mm in any dimension shall be removed from the surface.

3.2.4.3 Protection

Areas with the prepared surface shall be protected from compaction or damage by vehicular or pedestrian traffic and surface erosion.

3.3 INSTALLATION

Prior to installing seed, any previously prepared surface compacted by construction equipment or damaged shall be disced to a depth of 300mm to meet the requirements of paragraph SITE PREPARATION. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.

3.3.1 Installing Seed

Seeding method shall be Broadcast seeding, Drill seeding, or Hydroseeding. Seeding procedure shall ensure even coverage. Gravity feed applicators, which drop seed directly from a hopper onto the prepared soil, shall not be used because of the difficulty in achieving even coverage, unless otherwise approved. Absorbent polymer powder shall be installed with the seed in the amount and as directed by the manufacturer for the type of seeding performed by the contractor.

3.3.1.1 Broadcast Seeding

Seed shall be uniformly broadcast at the rate of 4.89 kilograms per 100

square meters (10 pounds per 1000 square feet).using broadcast seeders. Half the total rate of seed application shall be broadcast in 1 direction, with the remainder of the seed rate broadcast at 90 degrees from the first direction. Seed shall be covered a maximum 6 mm depth by disk harrow, steel mat drag, cultipacker, or other approved device.

3.3.1.2 Drill Seeding

Seed shall be uniformly drilled to a maximum 13 mm depth and at the rate of 4.89 kilograms per 100 square meters (10 pounds per 1000 square feet) , using Brillon type seeders . Row markers shall be used with the drill seeder. Half the total rate of seed application shall be drilled in 1 direction, with the remainder of the seed rate drilled at 90 degrees from the first direction. The drilling equipment shall be maintained with half full seed boxes during the seeding operations.

3.3.1.3 Rolling

The entire area shall be firmed with a roller not exceeding 130 kilograms per meter roller width. Slopes over a maximum 3-horizontal-to-1 vertical shall not be rolled. Areas seeded with seed drills equipped with rollers shall not be rolled.

3.3.2 Hydroseeding

Seed shall be mixed to ensure broadcast at the rate of 4.89 kilograms per 100 square meters (10 lbs per 1,000 square feet) . Seed and fertilizer shall be added to water and thoroughly mixed to meet the rates specified. The time period for the seed to be held in the slurry shall be a maximum 24 hours. Wood cellulose fiber mulch and tackifier shall be added at the rates of no less than 2240 kilograms per hectare (2000 lbs per acre) after the seed, fertilizer, and water have been thoroughly mixed to produce a homogeneous slurry. Slurry shall be uniformly applied under pressure over the entire area. The hydroseeded area shall not be rolled.

3.3.3 Mulching

3.3.3.1 Hay or Straw Mulch

Hay or straw mulch shall be spread uniformly at the rate of 0.75 metric tons per hectare . Mulch shall be spread by hand, blower-type mulch spreader, or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of steep slopes, and continued uniformly until the area is covered. The mulch shall not be bunched or clumped. Sunlight shall not be completely excluded from penetrating to the ground surface. All areas installed with seed shall be mulched on the same day as the seeding. Mulch shall be anchored immediately following spreading.

3.3.3.2 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

3.3.3.3 Non-Asphaltic Tackifier

Hydrophilic colloid shall be applied at the rate recommended by the manufacturer, using hydraulic equipment suitable for thoroughly mixing with

water. A uniform mixture shall be applied over the area.

3.3.4 Watering Seed

Watering shall be started immediately after completing the seeding of an area. Water shall be applied to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 25 mm depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over turf areas, unless otherwise directed. Watering of other adjacent areas or plant material shall be prevented.

3.4 SURFACE EROSION CONTROL

3.4.1 Surface Erosion Control Material

Where indicated on the drawings and on all slopes that are 3 horizontal to 1 vertical and steeper shall have as directed, surface erosion control material installed in accordance with manufacturer's instructions. Placement of the material shall be accomplished without damage to installed material or without deviation to finished grade.

3.4.2 Temporary Seeding

The application rate shall be 0.98 kilograms per 100 square meters (2 lbs per 1,000 square feet) . When directed during contract delays affecting the seeding operation or when a quick cover is required to prevent surface erosion, the areas designated shall be seeded in accordance with temporary seed species listed under Paragraph SEED.

3.4.2.1 Soil Amendments

When soil amendments have not been applied to the area, the quantity of 1/2 of the required soil amendments shall be applied and the area tilled in accordance with paragraph SITE PREPARATION. The area shall be watered in accordance with paragraph Watering Seed.

3.4.2.2 Remaining Soil Amendments

The remaining soil amendments shall be applied in accordance with the paragraph Tillage when the surface is prepared for installing seed.

3.5 QUANTITY CHECK

For materials provided in bags, the empty bags shall be retained for recording the amount used. For materials provided in bulk, the weight certificates shall be retained as a record of the amount used. The amount of material used shall be compared with the total area covered to determine the rate of application used. Differences between the quantity applied and the quantity specified shall be adjusted as directed.

3.6 APPLICATION OF PESTICIDE

When application of a pesticide becomes necessary to remove a pest or disease and when weeds comprise more than 5% of the seeded plant material, a pesticide treatment plan shall be submitted and coordinated with the installation pest management program.

3.6.1 Technical Representative

The certified installation pest management coordinator shall be the technical representative, and shall be present at all meetings concerning treatment measures for pest or disease control. They may be present during treatment application.

3.6.2 Application

A state certified applicator shall apply required pesticides in accordance with EPA label restrictions and recommendations. Clothing and personal protective equipment shall be used as specified on the pesticide label. A closed system is recommended as it prevents the pesticide from coming into contact with the applicator or other persons. Water for formulating shall only come from designated locations. Filling hoses shall be fitted with a backflow preventer meeting local plumbing codes or standards. Overflow shall be prevented during the filling operation. Prior to each day of use, the equipment used for applying pesticide shall be inspected for leaks, clogging, wear, or damage. Any repairs are to be performed immediately. A pesticide plan shall be submitted.

3.7 RESTORATION AND CLEAN UP

3.7.1 Restoration

Existing turf areas, pavements, and facilities that have been damaged from the seeding operation shall be restored to original condition at Contractor's expense.

3.7.2 Clean Up

Excess and waste material shall be removed from the seeded areas and shall be disposed offsite. Adjacent paved areas shall be cleaned.

3.8 PROTECTION OF INSTALLED AREAS

Immediately upon completion of the seeding operation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed.

3.9 SEED ESTABLISHMENT PERIOD

3.9.1 Commencement

The seed establishment period to obtain a healthy stand of grass plants shall begin on the first day of work under this contract and shall end 3 months after the last day of the seeding operation. Written calendar time period shall be furnished for the seed establishment period. When there is more than 1 seed establishment period, the boundaries of the seeded area covered for each period shall be described. The seed establishment period shall be modified for inclement weather, shut down periods, or for separate completion dates of areas.

3.9.2 Satisfactory Stand of Grass Plants

Grass plants shall be evaluated for species and health when the grass plants are a minimum 25 mm high.

3.9.2.1 Lawn Area

A satisfactory stand of grass plants from the seeding operation for a lawn

area shall be defined as consisting of no less than 2000 seed plants per square meter . Bare spots shall be a maximum 150 mm square. The total bare spots shall be a maximum 2 percent of the total seeded area.

3.9.3 Maintenance During Establishment Period

Maintenance of the seeded areas shall include eradicating weeds, insects and diseases; protecting embankments and ditches from surface erosion; maintaining erosion control materials and mulch; protecting installed areas from traffic; mowing; watering; and post-fertilization.

3.9.3.1 Mowing

- a. Lawn Areas: Lawn areas shall be mowed to a minimum 60 mm height when the turf is a maximum 90 mm high. Clippings shall be removed when the amount cut prevents sunlight from reaching the ground surface.

3.9.3.2 Post-Fertilization

The application rate shall be at the rate of no less than 0.454 kilograms of actual nitrogen per 100 square meters (1 lb of actual nitrogen per 1,000 square feet).. The application shall be timed prior to the advent of winter dormancy and shall be made without burning the installed grass plants.

3.9.3.3 Pesticide Treatment

Treatment for disease or pest shall be in accordance with paragraph APPLICATION OF PESTICIDE.

3.9.3.4 Repair or Reinstall

Unsatisfactory stand of grass plants and mulch shall be repaired or reinstalled, and eroded areas shall be repaired in accordance with paragraph SITE PREPARATION.

3.9.3.5 Maintenance Record

A record of each site visit shall be furnished, describing the maintenance work performed; areas repaired or reinstalled; and diagnosis for unsatisfactory stand of grass plants.

-- End of Section --

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SECTION 13110

CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE)

11/98

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SECTION 13110

CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE)
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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM B 843 (1996) Magnesium Alloy Anodes for Cathodic Protection

ASTM D 1248 (1984; R 1989) Polyethylene Plastics Molding and Extrusion Materials

NACE INTERNATIONAL (NACE)

NACE RP0169 (1996) Control of External Corrosion on Underground or Submerged Metallic Piping Systems

NACE RP0177 (1995) Mitigation of Alternating Current and Lightning Effects on Metallic Piping Systems

NACE RP0190 (1995) External Protective Coatings for Joints, Fittings, and Valves on Metallic Underground or Submerged Pipelines and Piping Systems

NACE RP0285 (1995) Corrosion Control of Underground Storage Tank Systems by Cathodic Protection

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA TC 2 (1990) Electrical Polyvinyl Chloride (PVC) Tubing (EPT) and Conduit (EPC-40 and EPC-80)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

UNDERWRITERS LABORATORIES (UL)

UL 6 (1997) Rigid Metal Conduit

UL 510 (1994; Rev thru Nov 1997) Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape

UL 514A (1996; Rev Jul 1998) Metallic Outlet Boxes

1.2 GENERAL REQUIREMENTS

The Contractor shall furnish and install a complete, operating, sacrificial anode cathodic protection system in complete compliance with NFPA 70, with all applicable Federal, State, and local regulations and with minimum requirements of this contract. The services required include planning, installation, adjusting and testing of a cathodic protection system, using sacrificial anodes for cathodic protection. The cathodic protection system shall include anodes, cables, connectors, corrosion protection test stations, and any other equipment required for a complete operating system providing the NACE criteria of protection as specified. Insulators are required whenever needed to insulate the pipes from any other structure. Cathodic protection shall be provided on all metal fitting, valves and fire hydrants installed on the new plastic waterlines.

1.2.1 Services of "Corrosion Expert"

The Contractor shall obtain the services of a "corrosion expert" to supervise, inspect, and test the installation and performance of the cathodic protection system. "Corrosion expert" refers to a person, who by thorough knowledge of the physical sciences and the principles of engineering and mathematics, acquired by professional education and related practical experience, is qualified to engage in the practice of corrosion control of buried or submerged metallic surfaces. Such a person must be accredited or certified by the National Association of Corrosion Engineers (NACE) as a NACE Accredited Corrosion Specialist or a NACE certified Cathodic Protection (CP) Specialist or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metallic piping and tank systems, if such certification or licensing includes 5 years experience in corrosion control on underground metallic surfaces of the type under this contract. The "corrosion expert" shall make at least 3 visits to the project site. The first of these visits shall include obtaining soil resistivity data, acknowledging the type of coatings to be used and reporting to the Contractor the type of cathodic protection required. Once the submittals are approved and the materials delivered, the "corrosion expert" shall revisit the site to ensure the Contractor understands installation practices and laying out the components. The third visit shall involve testing the installed cathodic protection systems and training applicable personnel on proper maintenance techniques. The "corrosion expert" shall supervise installation and testing of all cathodic protection.

1.2.2 Contractor's Modifications

The specified system is based on a complete system with magnesium sacrificial anodes. The Contractor may modify the cathodic protection system after review of the project, site verification, and analysis, if the proposed modifications include the anodes specified and will provide better overall system performance. The modifications shall be fully described, shall be approved by the Contracting Officer's representative, and shall meet the following criteria. The proposed system shall achieve a minimum pipe-to-soil "instant off" potential of minus 850 millivolts with reference

to a saturated copper-copper sulfate reference cell on the underground components of the piping or other metallic surface. The Contractor shall take resistivity measurements of the soil in the vicinity of the pipes and ground bed sites. Based upon the measurements taken, the current and voltage shall be required to produce a minimum of minus 850 millivolts "instant off" potential between the structure being tested and the reference cell. This potential shall be obtained over 95 percent of the metallic area. The anode system shall be designed for a life of twenty-five (25) years of continuous operation.

1.2.3 Isolators

Isolators are required to insulate metallic pipes from any other structure.

1.2.4 Anode and Bond Wires

A minimum of 1 magnesium anode with an unpackaged weight of 17 kilograms shall be provided on metal fittings, valves and fire hydrants. A single test station shall be used for each anode. Bonding of existing buried structures may also be required to preclude detrimental stray current effects and safety hazards. Provisions shall be included to return stray current to its source without damaging structures intercepting the stray current. The electrical isolation of underground facilities in accordance with acceptable industry practice shall be included under this section. All tests shall be witnessed by the Contracting Officer.

1.2.5 Surge Protection (NOT USED)

1.2.6 Summary of Services Required

The scope of services shall include, but shall not be limited to, the following:

- a. Cathodic Protection Systems.
- b. System testing.
- c. Interference testing.
- d. Training.
- e. Operating and maintenance manual.
- f. Insulator testing and bonding testing.
- g. Coating and holiday testing shall be submitted within 45 days of notice to proceed.

1.2.7 Nonmetallic Pipe System

All metallic components of this pipe system shall be protected with cathodic protection. Detailed drawings of cathodic protection for each component shall be submitted to the Contracting Officer for approval within 45 days after date of receipt of notice to proceed, and before commencement of any work.

1.2.7.1 Coatings

Coatings for metallic components shall be as required for metallic

fittings. Protective covering (coating and taping) shall be completed and tested on each metallic component (such as valves, hydrants and fittings). This covering shall be as required for underground metallic pipe. Each test shall be witnessed by the Contracting Officer. Coatings shall be selected, applied, and inspected in accordance with NACE RP0190 and as specified in these specifications. The use of nonmetallic pipe does not change other requirements of the specifications. Any deviations due to the use of nonmetallic pipe shall be submitted for approval.

1.2.7.2 Tracer Wire

When a nonmetallic pipe line is used to extend or added to an existing metallic line, an insulated No. 8 AWG copper wire shall be thermit-welded to the existing metallic line and run the length of the new nonmetallic line. This wire shall be used as a locator tracer wire and to maintain continuity to any future extensions of the pipe line.

1.2.8 Tests of Components

A minimum of four (4) tests shall be made at each metallic component in the piping system. Two (2) measurements shall be made directly over the anodes and the other two (2) tests shall be over the outer edge of the component, but at the farthest point from the anodes. Structure and pipes shall be shown with the cathodic protection equipment. All components of the cathodic protection system shall be shown on drawings, showing their relationship to the protected structure or component. A narrative shall describe how the cathodic protection system will work and provide testing at each component. Components requiring cathodic protection shall include but not be limited to the following:

- a. PIV.
- b. Shutoff valves.
- c. Metallic pipe extended from aboveground locations.
- d. Each connector or change-of-direction device.
- e. Any metallic pipe component or section.
- f. Backflow preventor.

1.2.9 Drawings

Detailed drawings shall be provided showing location of anodes, insulated fittings, test stations, permanent reference cells, and bonding. Locations shall be referenced to two (2) permanent facilities or mark points.

1.2.10 Electrical Potential Measurements

All potential tests shall be made at a minimum of 3 meter intervals witnessed by the Contracting Officer. Submittals shall identify test locations on separate drawing, showing all metal to be protected and all cathodic protection equipment. Test points equipment and protected metal shall be easily distinguished and identified.

1.2.11 Achievement of Criteria for Protection

All conductors, unless otherwise shown, shall be routed to or through the test stations. Each system provided shall achieve a minimum pipe-to-soil "instant off" potential of minus 850 millivolt potentials with reference to a saturated copper-copper-sulfate reference cell on all underground components of the piping. Based upon the measurements taken, the current and voltage of the anodes should be adjusted as required to produce a minimum of minus 850 millivolts "instant off" potential between the structure being tested and the reference cell. This potential should be obtained over 95 percent of the metallic area. This must be achieved without the "instant off" potential exceeding 1150 millivolts. Testing will be witnessed by the Contracting Officer. Additional anodes shall be provided by the Contractor if required to achieve the minus 850 millivolts "instant off". Although acceptance criteria of the cathodic protection systems are defined in NACE RP0169, for this project the "instant off" potential of minus 850 millivolts is the only acceptable criteria.

1.2.12 Metallic Components and Typicals

a. Metallic components: As a minimum, each metallic component shall be protected with one magnesium anode. The number of anodes is required to achieve minus 850 millivolts "instant off" potential on the metallic area and at the same time not provide overvoltage above 1150 millivolts "instant off." As a minimum, the magnesium anode unpackaged weight shall be 7.7 kilograms. The magnesium anodes shall be located on the side of the metallic component and routed through a test station.

b. Fire Hydrants: Fire hydrant pipe components shall have a minimum of two (2) anodes. These magnesium anodes shall have an unpackaged weight of 7.7 kilograms (17 lbs).

c. Valves: Each valve shall be protected with 1 magnesium anode. The magnesium anode shall have an unpackaged weight of 7.7 kilograms.

d. Connectors or Change-of-Direction Devices: Each change-of-direction device shall be protected with 1 magnesium anode. The magnesium anode shall have an unpackaged weight of 7.7 kilograms.

1.2.13 Metallic Component Coating

Coatings for metallic components shall be as required for metallic fittings as indicated. This will include fire hydrants, T's, elbows, valves, etc. Coatings shall be selected, applied, and inspected in accordance with NACE RP0190 and as specified in these specifications.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Materials and Equipment; G-RE.

Within 30 days after receipt of notice to proceed, an itemized list of equipment and materials including item number, quantity, and manufacturer of each item. The list shall be accompanied by a description of procedures

for each type of testing and adjustments, including testing of coating for thickness and holidays. Installation of materials and equipment shall not commence until this submittal is approved.

Spare Parts; .

Spare parts data for each different item of material and equipment specified, after approval of detail drawings and not later than six (6) months prior to the date of beneficial occupancy. The data shall include a complete list of parts, special tools, and supplies, with current unit prices and source of supply. One (1) spare anode of each type shall be furnished.

SD-02 Shop Drawings

Cathodic Protection System; G-RE.

Two copies of detail drawings consisting of a complete list of equipment and material including manufacturer's descriptive and technical literature, catalog cuts, results of system design calculations including soil-resistivity, installation instructions and certified test data stating the maximum recommended anode current output density and the rate of gaseous production if any at that current density. Detail drawings shall contain complete wiring and schematic diagrams and any other details required to demonstrate that the system has been coordinated and will function properly as a unit.

Contractor's Modifications; G-RE.

Two copies of detail drawings showing proposed changes in location, scope of performance indicating any variations from, additions to, or clarifications of contract drawings. The drawings shall show proposed changes in anode arrangement, anode size and number, anode materials and layout details, conduit size, wire size, mounting details, wiring diagram, method for electrically-isolating each pipe, and any other pertinent information to proper installation and performance of the system.

SD-06 Test Reports

Tests and Measurements; .

Test reports in booklet form tabulating all field tests and measurements performed, upon completion and testing of the installed system and including close interval potential survey, casing and interference tests, final system test verifying protection, insulated joint and bond tests, and holiday coating test. A certified test report showing that the connecting method has passed a 120-day laboratory test without failure at the place of connection, wherein the anode is subjected to maximum recommended current output while immersed in a three percent sodium chloride solution.

Contractor's Modifications; G-RE.

Final report regarding Contractor's modifications. The report shall include pipe-to-soil measurements throughout the affected area, indicating that the modifications improved the overall conditions, and current measurements for anodes. The following special materials and information are required: taping materials and conductors; zinc grounding cell, installation and testing procedures, and equipment; coating material; system design calculations for anode number, life, and parameters to achieve protective

potential; backfill shield material and installation details showing waterproofing; bonding and waterproofing details; insulated resistance wire; exothermic weld equipment and material.

SD-07 Certificates

Cathodic Protection System; .

Proof that the materials and equipment furnished under this section conform to the specified requirements contained in the referenced standards or publications. The label or listing by the specified agency will be acceptable evidence of such compliance.

Services of "Corrosion Expert"; G-RE.

Evidence of qualifications of the "corrosion expert."

a. The "corrosion expert's" name and qualifications shall be certified in writing to the Contracting Officer prior to the start of construction.

b. Certification shall be submitted giving the name of the firm, the number of years of experience, and a list of not less than five (5) of the firm's installations three (3) or more years old that have been tested and found satisfactory.

SD-10 Operation and Maintenance Data

Cathodic Protection System;

Before final acceptance of the cathodic protection system, two copies of operating manuals outlining the step-by-step procedures required for system startup, operation, adjustment of current flow, and shutdown. The manuals shall include the manufacturer's name, model number, service manual, parts list, and brief description of all equipment and their basic operating features. Two copies of maintenance manual, listing routine maintenance procedures, recommendation for maintenance testing, possible breakdowns and repairs, and troubleshooting guides. The manuals shall include single-line diagrams for the system as installed; instructions in making pipe-to-reference cell potential measurements and frequency of monitoring; instructions for dielectric connections, interference and sacrificial anode bonds; instructions shall include precautions to ensure safe conditions during repair of pipe or other metallic systems. The instructions shall be neatly bound between permanent covers and titled "Operating and Maintenance Instructions." These instructions shall be submitted for the Contracting Officer's approval. The instructions shall include the following:

a. As-built drawings, to scale of the entire system, showing the locations of the piping, location of all anodes and test stations, locations of all insulating joints, and structure-to-reference cell potentials as measured during the tests required by Paragraph: TESTS AND MEASUREMENTS, of this section.

b. Recommendations for maintenance testing, including instructions in making pipe-to-reference cell potential measurements and frequency of testing.

c. All maintenance and operating instructions and nameplate data shall be in English.

d. Instructions shall include precautions to insure safe conditions during repair of pipe system.

Training Course ; .

The proposed Training Course Curriculum (including topics and dates of discussion) indicating that all of the items contained in the operating and maintenance instructions, as well as demonstrations of routine maintenance operations, including testing procedures included in the maintenance instructions, are to be covered.

PART 2 PRODUCTS

2.1 MAGNESIUM ANODES

Anodes shall be installed as required. See Paragraph METALLIC COMPONENTS AND TYPICALS for additional requirements.

2.1.1 Anode Composition

Anodes shall be of high-potential magnesium alloy, made of primary magnesium obtained from sea water or brine, and not made from scrap metal. Magnesium anodes shall conform to ASTM B 843 and to the following analysis (in percents) otherwise indicated:

| | |
|------------------------|-----------------------------|
| Aluminum, max. | 0.010 |
| Manganese, max. | 0.50 to 1.30 |
| Zinc | 0.05 |
| Silicon, max. | 0.05 |
| Copper, max. | 0.02 |
| Nickel, max. | 0.001 |
| Iron, Max. | 0.03 |
| Other impurities, max. | 0.05 each or 0.3 max. total |
| Magnesium | Remainder |

The Contractor shall furnish spectrographic analysis on samples from each heat or batch of anodes used on this project.

2.1.2 Dimensions and Weights

Dimensions and weights of anodes shall be approximately as follows:

TYPICAL MAGNESIUM ANODE SIZE

(Cross sections may be round, square, or D shaped)

| NOMINAL WT. kg. | APPROX. SIZE (mm) | NOMINAL GROSS WT kg PACKAGED IN BACKFILL | NOMINAL PACKAGE DIMENSIONS (mm) |
|--------------------|----------------------|--|------------------------------------|
| 7.7 | 102 X 102 X 432 | 20.5 | 191 X 610 |

2.1.3 Packaged Anodes

Anodes shall be provided in packaged form with the anode surrounded by specially-prepared quick-wetting backfill and contained in a water

permeable cloth or paper sack. Anodes shall be centered by means of spacers in the backfill material. The backfill material shall have the following composition, unless otherwise indicated:

| Material | Approximate Percent by Weight |
|-----------------|-------------------------------|
| Gypsum | 75 |
| Bentonite | 20 |
| Sodium Sulphate | 5 |
| Total | 100 |

2.1.4 NOT USED

2.1.5 Connecting Wire

2.1.5.1 Wire Requirements

Wire shall be No. 12 AWG solid copper wire, not less than 3 meters long, unspliced, complying with NFPA 70, Type TW insulation. Connecting wires for magnesium anodes shall be factory installed with the place or emergence from the anode in a cavity sealed flush with a dielectric sealing compound.

2.1.5.2 NOT USED

2.2 MISCELLANEOUS MATERIALS

2.2.1 Electrical Wire

Wire shall be No. 12 AWG stranded copper wire with NFPA 70, Type TW or RHW-USE or RHW-USE or Polyethylene insulation. Polyethylene insulation shall comply with the requirements of ASTM D 1248 and shall be of the following types, classes, and grades:

High-molecular weight polyethylene shall be Type I, Class C, Grade E5.

High-density polyethylene shall be Type III, Class C, Grade E3.

2.2.1.1 Wire Splicing

Connecting wire splicing shall be made with copper compression connectors or exothermic welds, following instructions of the manufacturer. Single split-bolt connections shall not be used. Sheaths for encapsulating electrical wire splices to be buried underground shall fit the insulated wires entering the spliced joints and epoxy potting compound shall be as specified below.

2.2.1.2 Test Wires

Test wires shall be AWG No.12 stranded copper wire with NFPA 70, Type TW or RHW or polyethylene insulation.

2.2.1.3 Resistance Wire

Resistance wire shall be AWG No. 16 or No. 22 nickel-chromium wire.

2.2.2 Conduit

Rigid galvanized steel conduit and accessories shall conform to UL 6. Non

metallic conduit shall conform to NEMA TC 2.

2.2.3 Test Boxes and Junctions Boxes

Boxes shall be outdoor type conforming to UL 514A.

2.2.4 Joint, Patch, Seal, and Repair Coating

Sealing and dielectric compound shall be a black, rubber based compound that is soft, permanently pliable, tacky, moldable, and unbacked. Compound shall be applied as recommended by the manufacturer, but not less than 13 mm thick. Coating compound shall be cold-applied coal-tar base mastic. Pressure-sensitive vinyl plastic electrical tape shall conform to UL 510.

2.2.5 Backfill Shields

Shields shall consist of approved pipeline wrapping or fiberglass-reinforced, coal-tar impregnated tape, or plastic weld caps, specifically made for the purpose and installed in accordance with the manufacturer's recommendations. When joint bonds are required, due to the use of mechanical joints, the entire joint shall be protected by the use of a kraft paper joint cover. The joint cover shall be filled with poured-in, hot coal-tar enamel.

2.2.6 Epoxy Potting Compound

Compound for encapsulating electrical wire splices to be buried underground shall be a two package system made for the purpose.

2.2.7 Test Stations

Stations shall be of the flush-curb-box type and shall be the standard product of a recognized manufacturer. Test stations shall be complete with an insulated terminal block having the required number of terminals. The test station shall be provided with a lockable over and shall have an embossed legend, "C.P. Test." A minimum of one (1) test station shall be provided for each component of the system. A minimum of six (6) terminals shall be provided in each test station. A minimum of two (2) leads are required to the metallic component from each test station. Other conductors shall be provided for each anode, other foreign pipe, and reference cells as required. Test stations may be constructed of nonmetallic materials. However, if nonmetallic materials are utilized, as a minimum, the materials shall be resistant to damage from ultraviolet radiation, contain good color retention qualities, contain high strength qualities, and be resistant to accidental or vandalistic impacts that might be normally encountered in the environment for which they are to be installed. The test stations shall be listed for the particular application for which they are to be utilized.

2.2.8 Joint and Continuity Bonds

Bonds shall be provided across any electrically discontinuous connections and all other pipes and structures with other than welded or threaded joints that are included in this cathodic protection system. Unless otherwise specified in the specifications, bonds between structures and across joints in pipe with other than welded or threaded joints shall be No. 8 AWG stranded copper cable with polyethylene insulation. Bonds between structures shall contain sufficient slack for any anticipated movement between structures. Bonds across pipe joints shall contain a minimum of 102

mm of slack to allow for pipe movement and soil stress. Bonds shall be attached by exothermic welding. Exothermic weld areas shall be insulated with coating compound and approved, and witnessed by the Contracting Officer. Continuity bonds shall be installed as necessary to reduce stray current interference. Additional joint bondings shall be accomplished by the Contractor where the necessity is discovered during construction or testing or where the Contracting Officer's representative directs that such bonding be done. Joint bonding shall include all associated excavation and backfilling. There shall be a minimum of two (2) continuity bonds between each structure and other than welded or threaded joints. The Contractor shall test for electrical continuity across all joints with other than welded or threaded joints and across all metallic portions or components. The Contractor shall provide bonding as required and as specified above until electrical continuity is achieved. Bonding test data shall be submitted for approval.

2.2.9 Resistance Bonds

Resistance bonds should be adjusted as outlined in this specification. Alternate methods may be used if they are approved by the Contracting Officer.

2.2.10 Stray Current Measurements

Stray current measurements should be performed at each test station. Stray currents resulting from lightning or overhead alternating current (AC) power transmission systems shall be mitigated in accordance with NACE RP0177.

2.2.11 Electrical Isolation of Structures

As a minimum, isolating flanges or unions shall be provided at the following locations:

- a. Connection of new metallic piping or components to existing piping.

Isolation shall be provided at metallic connection of all lines to existing system and where connecting to a building.

2.2.11.1 Electrically Isolating Pipe Joints

Electrically isolating pipe joints shall be of a type that is in regular factory production.

2.2.11.2 Electrically Conductive Couplings

Electrically conductive couplings shall be of a type that has a published maximum electrical resistance rating given in the manufacturer's literature. Cradles and seals shall be of a type that is in regular factory production made for the purpose of electrically insulating the carrier pipe from the casing and preventing the incursion of water into the annular space.

2.2.11.3 Insulating Joint Testing

A Model 601 Insulation Checker, as manufactured by "Gas Electronics", or an approved equal, shall be used for insulating joint flange electrical testing.

2.2.12 Underground Structure Coating

This coating specification shall take precedence over any other project specification and drawing notes, whether stated or implied, and shall also apply to the pipeline or tank supplier. No variance in coating quality shall be allowed by the Contractor or Base Construction Representative without the written consent of the designer. All underground metallic pipelines and tanks to be cathodically protected shall be afforded a good quality factory-applied coating. This includes all carbon steel, cast-iron and ductile-iron pipelines or vessels. Coatings shall be selected, applied, and inspected in accordance with NACE RP0190 and as specified. If non-metallic pipelines are installed, all metallic fittings on pipe sections shall be coated in accordance with this specification section.

a. The nominal thickness of the metallic pipe joint or other component coating shall be 0.6 mm, plus or minus 5 percent.

b. Pipe and joint coating for factory applied or field repair material shall be applied as recommended by the manufacturer and shall be one of the following:

- (1) Continuously extruded polyethylene and adhesive coating system.
- (2) Polyvinyl chloride pressure-sensitive adhesive tape.
- (3) High density polyethylene/bituminous rubber compound tape.
- (4) Butyl rubber tape.
- (5) Coal tar epoxy.

2.2.12.1 Field Joints

All field joints shall be coated with materials compatible with the pipeline coating compound. The joint coating material shall be applied to an equal thickness as the pipeline coating. Unbonded coatings shall not be used on these buried metallic components. This includes the elimination of all unbonded polymer wraps or tubes. Once the pipeline or vessel is set in the trench, an inspection of the coating shall be conducted. This inspection shall include electrical holiday detection. Any damaged areas of the coating shall be properly repaired. The Contracting Officer shall be asked to witness inspection of the coating and testing using a holiday detector.

2.2.12.2 Inspection of Pipe Coatings

Any damage to the protective covering during transit and handling shall be repaired before installation. After field coating and wrapping has been applied, the entire pipe shall be inspected. All holidays in the protective covering shall be repaired immediately upon detection. All labor, materials, and equipment necessary for conducting the inspection shall be furnished by the Contractor.

a. Not Used.

b. Ferrous surfaces: Shop-primed surfaces shall be touched-up with ferrous metal primer. Surfaces that have not been shop-primed shall be solvent-cleaned. Surfaces that contain loose rust, loose mil scale, and other foreign substances shall be mechanically-cleaned by power wire-brushing and primed with ferrous metal primer. Primed surface shall be finished with two (2) coats of exterior oil paint and vinyl paint. Coating for each entire piping service shall be an approved pipe line

wrapping having a minimum coating resistance of 50,000 Ohms per 0.0929 square meters .

2.2.13 Resistance Wire

Wire shall be No. 16 or No. 22 nickel-chromium wire with TW insulation.

2.2.14 Electrical Connections

Electrical connections shall be done as follows:

a. Exothermic welds shall be "Cadweld", "Bundy", "Thermoweld" or an approved equal. Use of this material shall be in strict accordance with the manufacturer's recommendations.

b. Electrical-shielded arc welds shall be approved for use on steel pipe by shop drawing submittal action.

c. Brazing shall be as specified in Paragraph: Lead Wire Connections.

2.2.15 Electrical Tape

Pressure-sensitive vinyl plastic electrical tape shall conform to UL 510.

2.2.16 Permanent Reference Electrodes

Permanent reference electrodes shall be Cu-CuSO₄ electrodes suitable for direct burial. Electrodes shall be guaranteed by the supplier for 15 years' service in the environment in which they shall be placed. Electrodes shall be installed directly beneath pipe, or metallic component.

2.2.17 Casing

Where a pipeline is installed in a casing under a roadway or railway, the pipeline shall be electrically insulated from the casing, and the annular space sealed and filled with an approved corrosion inhibiting product against incursion of water.

PART 3 EXECUTION

3.1 CRITERIA OF PROTECTION

Acceptance criteria for determining the adequacy of protection on a buried underground metallic component shall be in accordance with NACE RP0285 and as specified below.

3.1.1 Iron and Steel

The following method (a) shall be used for testing cathodic protection voltages. If more than one method is required, method (b) shall be used.

a. A negative voltage of at least minus 850 millivolts as measured between the underground component and a saturated copper-copper sulphate reference electrode connecting the earth (electrolyte) directly over the underground component. Determination of this voltage shall be made with the cathodic protection system in operation. Voltage drops shall be considered for valid interpretation of this voltage measurement. A minimum of minus 850 millivolts "instant off" potential between the underground component

being tested and the reference cell shall be achieved over 95 percent of the area of the structure. Adequate number of measurements shall be obtained over the entire structure, pipe, tank, or other metallic component to verify and record achievement of minus 850 millivolts "instant off." This potential shall be obtained over 95 percent of the total metallic area without the "instant off" potential exceeding 1200 millivolts.

b. A minimum polarization voltage shift of 100 millivolts as measured between the underground component and a saturated copper-copper sulphate reference electrode contacting the earth directly over the underground component. This polarization voltage shift shall be determined by interrupting the protective current and measuring the polarization decay. When the protective current is interrupted, an immediate voltage shift will occur. The voltage reading, after the immediate shift, shall be used as the base reading from which to measure polarization decay. Measurements achieving 100 millivolts decay shall be made over 95 percent of the metallic surface being protected.

c. For any metallic component, a minimum of four (4) measurements shall be made using subparagraph (a), above, and achieving the "instant off" potential of minus 850 millivolts. Two (2) measurements shall be made over the anodes and two (2) measurements shall be made at different locations near the component and farthest away from the anode.

3.1.2 NOT USED

3.2 ANODE STORAGE AND INSTALLATION

3.2.1 Anode Storage

Storage area for magnesium anodes will be designated by the Contracting Officer. If anodes are not stored in a building, tarps or similar protection should be used to protect anodes from inclement weather. Packaged anodes, damaged as a result of improper handling or being exposed to rain, shall be resacked by the Contractor and the required backfill added.

3.2.2 Anode Installation

Unless otherwise authorized, installation shall not proceed without the presence of the Contracting Officer. Anodes of the size specified shall be installed to the depth indicated. Locations may be changed to clear obstructions with the approval of the Contracting Officer. Anodes shall be installed in sufficient number and of the required type, size, and spacing to obtain a uniform current distribution over the surface of the structure. The anode system shall be designed for a life of 25 years of continuous operation. Anodes shall be installed in a dry condition after any plastic or waterproof protective covering has been completely removed from the water permeable, permanent container housing the anode metal. The anode connecting wire shall not be used for lowering the anode into the hole. The annular space around the anode shall be backfilled with fine earth in 150 mm layers and each layer shall be hand tamped. Care must be exercised not to strike the anode or connecting wire with the tamper. Approximately 20 liters of water shall be applied to each filled hole after anode backfilling and tamping has been completed to a point about 150 mm above the anode. After the water has been absorbed by the earth, backfilling shall be completed to the ground surface level.

3.2.2.1 Single Anodes

Single anodes shall be connected through a test station to the metallic component, allowing adequate slack in the connecting wire to compensate for movement during backfill operation.

3.2.2.2 Groups of Anodes

Groups of anodes shall be connected to an anode header cable. The anode header cable shall make contact with the structure to be protected only through a test station. Anode lead connection to the anode header cable shall be made by an approved crimp connector or exothermic weld and splice mold kit with appropriate potting compound.

3.2.2.3 Welding Methods

Connections shall be made by exothermic weld methods manufactured for the type of metallic component supplied. Electric arc welded connections and other types of welded connections to ferrous pipe and structures shall be approved before use.

3.2.3 Anode Placement - General

Packaged anodes shall be installed completely dry, and shall be lowered into holes by rope sling or by grasping the cloth gather. The anode lead wire shall not be used in lowering the anodes. The hole shall be backfilled with fine soil in 150 mm layers and each layer shall be hand-tamped around the anode. Care must be exercised not to strike the anode or lead wire with the tamper. If immediate testing is to be performed, water shall be added only after backfilling and tamping has been completed to a point 150 mm above the anode. Approximately 8 liters of water may be poured into the hole. After the water has been absorbed by the soil, backfilling and tamping may be completed to the top of the hole. Anodes shall be installed as specified or shown. In the event a rock strata is encountered prior to achieving specified augered-hole depth, anodes may be installed horizontally to a depth at least as deep as the bottom of the pipe, with the approval of the Contracting Officer.

3.2.4 Underground Pipeline

Anodes shall be installed at a minimum of 2.5 meters and a maximum of 3 meters from the line to be protected.

3.2.5 Installation Details

Details shall conform to the requirements of this specification.

3.2.6 Lead Wire Connections

3.2.6.1 Underground Pipeline (Metallic)

To facilitate periodic electrical measurements during the life of the sacrificial anode system and to reduce the output current of the anodes, if required, all anode lead wires shall be connected to a test station and buried a minimum of 610 mm in depth. The cable shall be No. 10 AWG, stranded copper, polyethylene or RHW-USE insulated cable. The cable shall make contact with the structure only through a test station. Resistance wire shall be installed between the cable and the pipe cable, in the test

station, to reduce the current output, if required. Anode connections, except in the test station, shall be made with exothermic welding process, and shall be insulated by means of at least three (3) layers of electrical tape; and all lead wire connections shall be installed in a moistureproof splice mold kit and filled with epoxy resin. Lead wire-to-structure connections shall be accomplished by an exothermic welding process. All welds shall be in accordance with the manufacturer's recommendations. A backfill shield filled with a pipeline mastic sealant or material compatible with the coating shall be placed over the weld connection and shall be of such diameter as to cover the exposed metal adequately.

3.2.6.2 Resistance Wire Splices

Resistance wire connections shall be accomplished with silver solder and the solder joints wrapped with a minimum of three (3) layers of pressure-sensitive tape. Lead wire connections shall be installed in a moistureproof splice mold kit and filled with epoxy resin.

3.2.7 Location of Test Stations

Test stations shall be of the type and location shown and shall be curb box mounted. Buried insulating joints shall be provided with test wire connections brought to a test station. Unless otherwise shown, other test stations shall be located as follows:

- a. At 300 m intervals or less.
- b. Where the pipe or conduit crosses any other metal pipe.
- c. At both ends of casings under roadways and railways.
- d. Where both sides of an insulating joint are not accessible above ground for testing purposes.

3.2.8 Underground Pipe Joint Bonds

Underground pipe having other than welded or threaded coupling joints shall be made electrically continuous by means of a bonding connection installed across the joint.

3.3 ELECTRICAL ISOLATION OF STRUCTURES

3.3.1 Isolation Joints and Fittings

Isolating fittings, including main line isolating flanges and couplings, shall be installed aboveground, or within manholes, wherever possible. Where isolating joints must be covered with soil, they shall be fitted with a paper joint cover specifically manufactured for covering the particular joint, and the space within the cover filled with hot coal-tar enamel. Isolating fittings in lines entering buildings shall be located at least 305 mm above grade of floor level, when possible. Isolating joints shall be provided with grounding cells to protect against over-voltage surges or approved surge protection devices. The cells shall provide a low resistance across isolating joint without excessive loss of cathodic current.

3.3.2 NOT USED

3.4 TRENCHING AND BACKFILLING

Trenching and backfilling shall be in accordance with Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITY SYSTEMS.

3.5 TESTS AND MEASUREMENTS

3.5.1 Baseline Potentials

Each test and measurement will be witnessed by the Contracting Officer. The Contractor shall notify the Contracting Officer a minimum of five (5) working days prior to each test. After backfill, the static potential-to-soil of the component shall be measured. The locations of these measurements shall be identical to the locations specified for component-to-reference electrode potential measurements. The initial measurements shall be recorded.

3.5.2 Isolation Testing

Before the anode system is connected to the component, an isolation test shall be made at each isolating joint or fitting. This test shall demonstrate that no metallic contact, or short circuit exists between the two isolated sections. Any isolating fittings installed and found to be defective shall be reported to the Contracting Officer.

3.5.2.1 Insulation Checker

A Model 601 insulation checker, as manufactured by "Gas Electronics", or an approved equal, using the continuity check circuit, shall be used for isolating joint (flange) electrical testing. Testing shall conform to the manufacturer's operating instructions. Test shall be witnessed by the Contracting Officer. An isolating joint that is good will read full scale on the meter. If an isolating joint is shorted, the meter pointer will be deflected or near zero on the meter scale. Location of the fault shall be determined from the instructions, and the joint shall be repaired. If an isolating joint is located inside a vault, the pipe shall be sleeved with insulator when entering and leaving the vault.

3.5.2.2 Cathodic Protection Meter

A Model B3A2 cathodic protection meter, as manufactured by "M.C. Miller", or an approved equal, using the continuity check circuit, shall be used for isolating joint (flange) electrical testing. This test shall be performed in addition to the Model 601 insulation checker. Continuity is checked across the isolation joint after the test lead wire is shorted together and the meter adjusted to scale. A full-scale deflection indicates the system is shorted at some location. The Model 601 verifies that the particular insulation under test is good and the Model B3A2 verifies that the system is isolated. If the system is shorted, further testing shall be performed to isolate the location of the short.

3.5.3 Anode Output

As the anodes or groups of anodes are connected to the component, current output shall be measured with an approved clamp-on milliammeter, calibrated shunt with a suitable millivoltmeter or multimeter, or a low resistance ammeter. Of the three methods, the low-resistance ammeter is the least desirable and most inaccurate. The clamp-on milliammeter is the most accurate. The values obtained and the date, time, and location shall be recorded.

3.5.4 Reference Electrode Potential Measurements

Upon completion of the installation and with the entire cathodic protection system in operation, electrode potential measurements shall be made using a copper-copper sulphate reference electrode and a potentiometer-voltmeter, or a direct-current voltmeter having an internal resistance (sensitivity) of not less than 10 megohms per volt and a full scale of 10 volts. The locations of these measurements shall be identical to the locations used for baseline potentials. The values obtained and the date, time, and locations of measurements shall be recorded. No less than eight (8) measurements shall be made over any length of line or component. Additional measurements shall be made at each distribution service riser, with the reference electrode placed directly over the service line.

3.5.5 Location of Measurements

3.5.5.1 Piping or Conduit

For coated piping or conduit, measurements shall be taken from the reference electrode located in contact with the earth, directly over the pipe. Connection to the pipe shall be made at service risers, valves, test leads, or by other means suitable for test purposes. Pipe-to-soil potential measurements shall be made at intervals not exceeding 3 meters. The Contractor may use a continuous pipe-to-soil potential profile in lieu of 1.5 meter interval pipe-to-soil potential measurements. Additional measurements shall be made at each distribution service riser, with the reference electrode placed directly over the service line adjacent to the riser. Potentials shall be plotted versus distance to an approved scale. Locations where potentials do not meet or exceed the criteria shall be identified and reported to the Contracting Officer's representative.

3.5.5.2 (NOT USED)

3.5.5.3 Casing Tests

Before final acceptance of the installation, the electrical separation of carrier pipe from casings shall be tested and any short circuits corrected.

3.5.5.4 Interference Testing

Before final acceptance of the installation, interference tests shall be made with respect to any foreign pipes in cooperation with the owner of the foreign pipes. A full report of the tests giving all details shall be made. Stray current measurements shall be performed at all isolating locations and at locations where the new pipeline crosses foreign metallic pipes. The method of measurements and locations of measurements shall be submitted for approval. As a minimum, stray current measurements shall be performed at the following locations:

- a. Connection point of new pipeline to existing pipeline.
- b. Crossing points of new pipeline with existing lines.

Results of stray current measurements shall also be submitted for approval.

3.5.5.5 Holiday Test

Any damage to the protective covering during transit and handling shall be

repaired before installation. After field-coating and wrapping has been applied, the entire pipe shall be inspected. Holidays in the protective covering shall be repaired upon detection. Labor, materials, and equipment necessary for conducting the inspection shall be furnished by the Contractor. The coating system shall be inspected for holes, voids, cracks, and other damage during installation.

3.5.5.6 Recording Measurements

All component-to-soil potential measurements, including initial potentials where required, shall be recorded. The Contractor shall locate, correct and report to the Contracting Officer any short circuits to foreign pipe encountered during checkout of the installed cathodic protection system. Component-to-soil potential measurements shall be taken on as many components as necessary to determine the extent of protection or to locate short-circuits.

3.6 TRAINING COURSE

The Contractor shall conduct a training course for the operating staff as designated by the Contracting Officer. The training period shall consist of a total of 4 hours of normal working time and shall start after the system is functionally completed but prior to final acceptance tests. The field instructions shall cover all of the items contained in the operating and maintenance instructions, as well as demonstrations of routine maintenance operations, including testing procedures included in the maintenance instructions. At least 14 days prior to date of proposed conduction of the training course, the training course curriculum shall be submitted for approval, along with the proposed training date. Training shall consist of demonstration of test equipment, providing forms for test data and the tolerances which indicate that the system works.

3.7 CLEANUP

The Contractor shall be responsible for cleanup of the construction site. All paper bags, wire clippings, etc., shall be disposed of as directed. Paper bags, wire clippings and other waste shall not be put in bell holes or anodes excavation.

3.8 MISCELLANEOUS INSTALLATION AND TESTING

3.8.1 Coatings

All components shall be coated as indicated or as approved. The coating shall be in accordance with all applicable Federal, State, and local regulations.

3.8.2 Excavation

In the event rock is encountered in providing the required depth for anodes, the Contractor shall determine an alternate approved location and, if the depth is still not provided, an alternate plan shall be submitted to the Contracting Officer. Alternate techniques and depths must be approved prior to implementation.

3.9 SPARE PARTS

After approval of shop drawings, and not later than three (3) months prior to the date of beneficial occupancy, the Contractor shall furnish spare

parts data for each different item of material and equipment specified. The data shall include a complete list of parts, special tools, and supplies, with current unit prices and source of supply. In addition, the Contractor shall supply information for material and equipment replacement for all other components of the complete system, including anodes, cables, splice kits and connectors, corrosion test stations, and any other components not listed above.

3.10 SEEDING

Seeding shall be done by the Contractor, as directed, in all unsurfaced locations disturbed by this construction. In areas where grass cover exists, it is possible that sod can be carefully removed, watered, and stored during construction operations, and replaced after the operations are completed since it is estimated that no section of pipeline should remain uncovered for more than two (2) days. The use of sod in lieu of seeding shall require approval by the Contracting Officer.

3.11 SYSTEM TESTING

The Contractor shall submit a report including potential measurements taken at adequately-close intervals to establish that minus 850 millivolts potential, "instant-off" potential, is provided, and that the cathodic protection is not providing interference to other foreign pipes causing damage to paint or pipes. The report shall provide a narrative describing how the criteria of protection is achieved without damaging other pipe or structures in the area.

3.12 CLEARING OF TREES AND UNDERBRUSH

In the areas of the anode beds, all trees and underbrush shall be cleared and grubbed to the limits shown or indicated.

-- End of Section --

